

LAKSHMAN TEMPLE, KHAJURAHO



# INDIAN ARCHAEOLOGY 1955-56

## —A REVIEW

*EDITED BY*

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I am also deeply obliged to those colleagues of mine who have helped me in the preparation of the text and plates and have seen the publication through the press within a remarkably short time.

*The 22nd August I956* A. GHOSH

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# INDIAN ARCHAEOLOGY 1955-56

## -A REVIEW

### 1. GENERAL

DURING the year under review, extensive regions were systematically explored and a large number of sites fruitfully excavated.

Exploration *in* the central Indian plateau and the western Deccan brought to light Stone Age tools, which could be divided into three broad categories, chronological as well as typological—Series I and II, respectively representing the Lower and Upper Palaeolithic, and Series III, consisting of microliths.

A fresh excavation at Lothal, in Kathiawad, which, along with Rangpur in the same region, has attained a definite place in Indian archaeology by its indicating the southern extension of the Harappa culture, produced further remnants of that culture, including steatite seals and terracotta seals and sealings with the typical Indus script and motifs. Other sites of the culture were identified by surface-exploration in Saurashtra and the northern parts of Bombay State.

The chalcolithic culture of central India was further investigated at Nevasa on the Godavari, in continuation of last year's work, and at Nagda on the Chambal. At the former place, *inter alia*, valuable information was gathered about the burial-practices of the chalcolithic people, and at the latter, which marks the northernmost known limit of the culture, a vast range of painted pottery of diverse types, associated with a mass of mud and mud-brick structures, was found. A renewed excavation at Ahar, near Udaipur, showed that the culture represented by the black-and-red ware must have had a prolonged existence. The ware has now been found in different regions in seemingly different contexts: an intensive typological and technological study is now called for.

Nevasa and Nagda contained deposits of the early historical period as well. Sites with remains of habitations exclusively or mainly of the historical period were also excavated. The limited work at Ujjain, the famous historical city, indicated its origin slightly before the introduction of the Northern Black Polished Ware at the site. At Kanauj, the deposit underlying the strata containing that Ware was flimsy but yielded the Painted Grey Ware and pottery associated with it. At Pataliputra, even within the limited areas available for digging, were obtained valuable stratigraphical evidence and antiquities, including the fragment of a probable Asokan pillar-capital. Fortifications were identified round the medieval towns of Gangaikondacholapuram and Tanjore.

New urn-field sites, pertaining to the megalithic culture of south India, were located in South Arcot and Tanjore Districts. As a step towards the completion of the excavation of diverse megalithic types in Chingleput District, three megaliths, each of a different type, were opened at Kunnattur.

Of the Buddhist sites, the work in the Ghoshitarama area at Kausambi was wound up with the identification of as many as sixteen structural sub-periods in the monastic complex, covering a period of over a thousand years. The accelerated excavation at Nagarjunakonda uncovered additional Buddhist establishments, together with a few significant inscriptions and other relics, and an elaborate flight of steps leading down to the river. At Sirpur, two more monasteries, with interesting plans, were exposed.

Casual explorations were sometimes no less important in results. Palaeoliths were recovered at Nandikeswar in District Bijapur, at Nagarjunakonda on the Krishna, at Banasandra in Mysore and at places near Poona, Mandasore in Malwa and Chittor in Rajasthan. Microliths were found to exist in the Nilgiris, in Poona District, at Dohad in Panchmahals District, in Kabra Pahar in Madhya Pradesh, at places in the Chambal valley, at Jhalrapatan and in the Berach and Gambhiri basins in Rajasthan and in Kutch. A shouldered stone axe was discovered in West Bengal. Painted red pottery of chalcolithic date was collected from sites along the Chambal. Additional sites with the Painted Grey and Northern Black Polished Wares could be located in Uttar Pradesh, and the latter Ware was also found at two places, one each in Bihar and West Bengal. The abacus of a pillar-capital of Asoka was discovered at Basti. New rock-cut caves were noticed at Bhaja and Ajanta.

Of the important epigraphical discoveries, the earliest was a damaged version of the Ninth Rock-edict of Asoka from Sopara, already known as the findspot of a fragment of the Eighth Rock-edict. A record engraved on a wooden ceiling-rib of a cave at Bhaja confirmed the date of the cave as the second century B.C. A few personages unknown before were introduced to history by new inscriptions, e.g. Arya-Visakhamitra, a second-century ruler of east India, and Satrudamana, a fifth-century chief of south-east India. An inscription recorded the pilgrimage of a prince of north Bengal to distant Elleswaram in Andhra land. The names of three unrecorded Chandella queens became known from copper-plates in the Bharat Kala Bhavan. The genealogy of the early Gajapati rulers of Orissa was revealed for the first time by two charters issued by the rulers of that dynasty.

Of the Arabic and Persian inscriptions, one, from north Bihar, referred to the reign of Kaika'us, an early ruler of the Delhi Sultanate ignored by the Delhi chroniclers. That Chittorgarh had remained under Delhi till Tughluq times, after its initial conquest by 'Alau'd Din Khalji, was established by a record of Muhammad bin Tughluq. A Bihar Sharif inscription showed the recognition of the authority of the last Tughluq ruler in east India even when he had been losing ground in Delhi. The conquest of Bihar by the Lodis was referred to in another inscription from the same place. The sway of the Bengal Sultans over Bihar was attested by five of their records found at

different places in Bihar. An inscription from Hindaun provided material for correcting the accepted genealogy of the Auhadis of Bayana.

Apart from jungle-clearance and execution of repairs of an ordinary nature, e.g. replacement of terrace-concrete, reflooring, resetting loose stones and bricks, etc., at a very large number of monuments, major works were undertaken at several monuments throughout India. Of them, mention may be made of the tomb of Abdur Rahim Khan-i-Khanan and Jami' Masjid at Delhi; excavated *asvamedha-sites* near Kalsi; Charbangla group of temples at Baranagar, District Murshidabad; Sibdol temple at Sibsagar; Sun-temple at Konarak; Mallikarjuna temple at Kambadoor, District Anantapur; Kondareddi Burj at Kurnool; monuments in Golconda fort; the newly-protected Iravatanesvara temple at Kanchipuram; monuments at Gingee; Brihadisvara temples at Gangaikondacholapuram and Tanjore; Siva temple at Todayur, District Tiruchirappalli; Tipu Sultan's palace at Bangalore; Vidyasankara temple at Sringeri; monuments at Srirangapatna; the caves at Ajanta, Ellora, Pitalkhora, Karla and Kanheri; Shaniwarwada in Poona; Jami' Masjid at Champaner; Siva temple at Bavka, District Panchmahals; Darbargarh at Sihor; inscribed rock at Junagadh; monuments in Chittorgarh; and group of temples at Badoli.

The chemical treatment of monuments and mural paintings progressed satisfactorily, and striking results were obtained at most places. Through persistent experiments, reagents for the effective removal of shellac-varnish and smoky films, which obscure many old paintings, were found. The investigation of soil-samples and technical study of ancient ceramics continued.

India is celebrating in a befitting manner the 2500th *Buddha-parinirvana* anniversary, which fell on the 24th May 1956. To be ready for the occasion, the Buddhist remains at Sravasti, Sankissa, Sarnath, Kusinagara, Nalanda., Rajgir and Sanchi received special attention, and extensive improvements of a permanent nature were effected *to* all of them. The museums at Sarnath and Nalanda were overhauled.

The Lalit Kala Akadami (National Academy of Art) has been asked by the Government of India to organize, in collaboration with the Department of Archaeology, a large-scale exhibition of Buddhist art. Many foreign countries and all the leading museums of India have readily responded to the invitation to take part in the exhibition by lending objects belonging to them. The exhibition is to open in November I956 at Delhi, whence it will travel to Banaras, Patna, Calcutta, Madras and Bombay.

## 2. EXPLORATIONS AND EXCAVATIONS

EXPLORATION IN DISTRICT BANDA.—The University of Allahabad, under Shri G. R. Sharma, carried out explorations in Banda District, Uttar Pradesh.

An extensive Stone Age site, covering an area of 5 square miles, was found at *Bariyari,* I4 miles to the east of Kausambi, on the right bank of a tributary of the Yamuna, now reduced by silting to the narrow proportions of a *nullah.* According to Shri Sharma, three terraces were noticed at the site. Terrace I yielded large numbers of tools (pl. I A) comprising handaxes, cleavers and scrapers, representing a bifacial industry of the Madras complex, besides flakes and cores. Though the majority of the tools were made on cores, flakes and flake-tools in Clactonian tradition were also fairly prominent. Terrace 2 yielded a good number of tools consisting mainly of (i) redeposited tools washed down from Terrace I, (ii) flakes and flake-tools of the Levallois technique and (iii) fresh tools showing Upper Palaeolithic characteristics (pl. I B) and comprising largely blades or flake-tools. The tool-assemblage of Terrace 3 consisted exclusively of microlithic blades, scrapers and burins, besides fluted cores, suggesting the evolution of the microlithic industry at the site from blade-tools. No pottery was associated with these implements.

A microlithic site was found near *Siddapura* in Karvi Sub-division at the foot-hills of the Vindhyas. The occupational deposit at the site, as revealed by the rain-gullies, was to a height of 5 ft. above a pebble-bed. The microlithic tools (pl. II top), with which the entire surface was littered, consisted of parallel-sided blades, pen-knife blades, borers, trapezes, scrapers and arrow-heads, in quartz, agate, chalcedony, etc. Tools made of bone and horn were also suspected and an admixture of crude pottery noticed. The sequence of evolution of tool-types and associated material can be accurately determined only by excavation.

A large number of polished stone celts with pointed butt, splayed edge, convex sides and lenticular cross-section (pl. II bottom), reminiscent of celts from Brahmagiri and Sanganakallu, were picked up from *Khoh, Agarhunda, Marjadpura* and *Chakond,* all situated within a radius of 8 miles from Karvi.

EXPLORATION IN GODAVARI-PRAVARA BASIN.—The Deccan College Post-graduate and Research Institute, under Dr. H. D. Sankalia and Dr. S. B. Deo, continued the exploration in the Godavari and Pravara basins as an adjunct to the resumed excavation at Nevasa (below, p. 8) with a view to obtaining a complete sequence of cultures in the area beginning with the Stone Age. It was revealed that the order of stratification in the region consisted of two beds of gravel at the bottom, surmounted successively by brownish silt, black soil and later occupational strata. Surface-exploration established the existence of two successive Stone Age industries, respectively called Series 1 and Series II, with a distinct overlap between the two, Levallois flakes providing the connecting link. Tools of Series 1 consisted of handaxes, cleavers, flakes, discoids, cores or hammer-stones and handaxes on cores of the Acheulian industry. Tools of Series II consisted of comparatively smaller flakes, cores, blades, scrapers, burins, points and Levallois flakes.

The larger implements of Series I (pl. III) were on dolerite, but when this material was replaced by chert, agate and jasper the tools became smaller and consisted of points, scrapers and blades, an industry—Series II—comparable in type with the Middle and Upper Palaeolithic of Europe and Africa.

The examination of a hundred miles of the Pravara from Akola in the west to Pravara-Sangam in the east led to the discovery of a number of Stone Age sites, some bearing tools of either series and others of both. Thus, tools of Series I alone were found only at *Akola,* while the following sites had tools of Series II only, viz. *Dhandhar-phaL Belapur (old), Kolhar, Kadit Khurd, Shenvadigaon, Kopare* and *Punatgaon,* of which Kadit Khurd contained painted pottery of the Jorwe-Nevasa type as well. Tools of both the Series were found at *Chikhali, Vanghikhurd, Sangam* and *Nevasa.* At Sangam, about 9 miles from Nevasa, a completely silicified piece of wood was found in the earlier gravel-bed, perhaps the first recorded occurrence of fossil-wood in the Deccan. In the Godavari basin, of the three places, *Belpandhari, Warkhed* and *Kalegaon,* all within a radius of 20 miles from Nevasa, tools of Series II were found at the first and last sites (pl. IV), though tools of Series 1 also were found loose on Gravel II at the first. In addition to the tools, a number of fossilized animal-bones were found at all these sites, particularly noteworthy being the head of a bison or a similar animal at Kalegaon.

EXPLORATION IN BOMBAY-KARNATAKA.—Exploration conducted on behalf of the Kannada Research Institute by Shri S. S. Malwad and Dr. H. D. Sankalia resulted in the discovery of a number of Stone Age sites, bearing, in different combinations, tools of Series I, II and III, besides a large cave with occupational deposits on the floor, and a few other sites of unascertained dates.

Stone tools of Series I consisted of handaxes, cleavers, large flakes and ovates on quartzite or sandstone; tools of Series II comprised Levallois flakes, blades, points and scrapers in chert; and tools of Series III were microliths, also in chert.

The pebble-bed of the Malaprabha at *Shivayogamandir,* near Badami, yielded tools of Series I only. *Angavadi,* on the Ghataprabha, bore tools of all the three Series in the pebble-bed on both the sides of the stream. *Bagalkot,* also on the Ghata-prabha, with two successive gravel-beds along the profile of the stream, was found to contain in succession tools of Series I and II. The higher and smaller gravels yield-ed tools of Series III. The pebble-bed exposed at *Herkal* contained tools of Series I and II: pottery and other remains of the early historical (Satavahana) period had **been** found here before. *Kolhar* and *Almatti,* both on the Krishna, yielded tools of Series I and II in the exposed gravel. At *Bilgi,* a *nullah* emanating from the foot-hills was found to contain tools of Series II and III, made respectively of chert and carnelian or jasper.

A large cave, measuring 52 ft. X 48 ft. X l5 ft., at *Shidlaphadi,* with a group of rock-shelters in its rear, was found to bear occupational debris, which yielded, on a preliminary probing, microliths and some pottery. Some of the boulders lying inside the cave were seen to bear graffiti comprising such forms as bull and sword with antennae. The cave-wall had inscriptions in white over a red background, palaeo-graphically ascribable to the fifth-sixth century A.D., suggesting an occupation of the cave, possibly intermittently, from the Stone Age to Chalukyan times.

Other sites, bearing differential traces of occupational deposits of undetermined antiquity, included one near *Hangal,* three or four around *Banavasi* and others in the village of *Hale-Bankapur* and its neighbourhood.

EXCAVATION AT LOTHAL, DISTRICT AHMADABAD.—The Western Circle, under Shri S. R. Rao, resumed excavation at this outpost of the Harappa culture, with a view to tracing the purpose of the mud-brick platform and ramparts, uncovered last year, and their interrelationship with the occupations at the site. It revealed three main periods of occupation, called Pre-Defence, Defence and Post-Defence Periods, respectively containing one, two and three structural sub-periods. The culture represented by the entire deposit was, however, one, viz. Harappan.

The earliest occupation, before the erection of the defences, suffered damage from the floods of the Bhogavo and Sabarmati rivers, resulting in the deposition of a thick layer of silt. This necessitated the erection of a huge solid platform of mud-bricks, and people built their dwellings on the platform the height of which was regarded as safe from floods. With the experience of subsequent floods, they raised the height of the platform and erected a clay rampart in addition, ushering in the Defence Period. The rampart appears to have been 35 ft. wide and 8 ft. high. That it was meant as a defence against floods is proved by the traces of the frequent breaches it suffered, the repairs and reinforcements effected to it from time to time and flood-deposits of debris and silt. As a last recourse the northern face of the platform was revetted with bricks and a major breach was mended effectively by the erection of a buttress-wall behind the breach and the filling up of the intermediate space with mud (pl .V). No further damage to the defences appears to have resulted thereafter.

A structure, measuring 54 ft. X 45 ft. X4 ft., with twelve rectangular solid blocks of mud-bricks and with channels, 3 ft. 3 in. to 3 ft. 9 in. wide and 45 ft. to 54 ft. long, running between each block and intersecting one another (pl. VI), was exposed outside the habitation-area in a small mound adjoining the rampart. The floor was paved with mud-bricks, and the walls were mud-plastered. The structure was built in two stages, the earlier contemporary with the construction of the second phase of the platform and the later with the Post-Defence Period. From the fact that the floor had turned red owing to burning and a large quantity of ashes, cinder and a small piece of charred wood was found in the channels, there is a possibility that the structure was a kiln for a large-scale baking of objects like triangular blocks of clay, sling-balls, etc. About a hundred terracotta sealings with reed-marks and finger-impressions were found in the channels. There were three drains at the end of the channels running from north to south, the southern end of the easternmost channel being temporarily closed with bricks. A similar structure, of burnt bricks, had been found at Mohenjo-daro to the south-west of the Great Bath.

Among other structural remains, one, measuring 16 ft. X l2 ft., having a bath and kitchen, with a drain each (pl. VII A) and a soak-pit at the end of the kitchen-drain, deserves special mention.

Two urns (pl. VII B), each containing crushed bones and a goblet and beaker, were found in one of the trenches. At another place was encountered a third urn, built into a brick structure and covered by a stone; this too contained fragmentary bones, together with a carnelian bead.

The pottery was thick, sturdy, well-burnt and made of well-levigated clay. Buff and red wares occurred simultaneously, together with a few sherds of black-and-cream, the result of inverted firing. A large number of sherds were painted with a variety of geometrical and non-geometrical designs, such as horizontal bands, loops, wavy lines, hatched diamonds, leaves, conventionalized fish, etc. (pl. VIII).

Among the small finds, mention may be made of: two steatite seals (pl. IX A and B); three terracotta seals and one hundred and seven terracotta sealings, variously with elephant, unicorn and bull figures and some with a few letters of the Indus script (pl. IX C); terracotta animal figurines (pl. X A); miscellaneous terracotta objects (pl. X B), such as toy-cart frames, dice, tubular and spacer beads and bangles; copper objects, comprising fish-hooks, pins, arrow-heads and a large rivetted vessel (pl. XI A); beads (pl. XII) of carnelian, steatite and agate, one bead, of jasper, being bordered with gold; chert blades, cores and flakes; bone styli and chessmen; stone weights; and shell ornaments (pl. XI B).

EXCAVATIONS OF OTHER HARAPPA SITES IN SAURASHTRA.—Trial-excavations were carried out at three places jointly by the Department of Archaeology, Saurashtra, and M. S. University of Baroda, under Shri P. P. Pandya and Dr. B. Subbarao respectively, to find out the culture-sequence in Saurashtra in general and the characteristics of the Harappa culture in the region in particular.

*Lakhabaval*, District Halar, situated about 9 miles north-east of Jamnagar, was one of the fourteen small Harappan settlements in the District. Excavation revealed three periods of occupation here. Period I, the earliest period, was characterized by pottery of thick fabric, like that of Period I of Rangpur, with an admixture of buff-slipped greenish sherds, the prominent forms in which were bowls and dishes-on-stand. Period II contained red polished ware and considerable quantities of coarse black-and-red painted pottery. The distinctive shape in the painted pottery was a large vessel with flared rim and with painted designs of net-pattern. An ornament of gold with exquisite filigree work, either an ear-ring or a head-ornament, was among the interesting antiquities of the Period. Period III represented a very late occupation on the mound, with crude rubble structures and late medieval coins. A few cores with typical crested ridges and marks of previous preparation were found on the surface of the mound.

*Amra*, District Halar, had a low mound, situated on the bank of a small stream, 3 miles away from Lakhabaval, in which three periods of occupation corresponding to those at Lakhabaval were noticed. Period I yielded Harappan pottery in profusion, besides typical red-and-black bowls, the result of inverted firing, showing that the technique was known to the Harappans.

At *Somnath*, District Sorath, about 2 miles from the south-east of Prabhas Patan, a group of five mounds, collectively known as Nagar, was found to extend along the river Hiranya, for a distance of about 3000 ft. Excavation revealed five continuous and successive periods of occupation at the site. (Period I contained the lustrous red ware of Rangpur II, together with typical carinated bowls and a large admixture of earlier wares of the transitional culture, coarse grey ware, a thick cream-slipped ware and the usual red and brown wares. The most interesting shapes in coarse grey ware were bowls with rounded sides and incurved and bevelled rims. Painted designs on the lustrous red ware consisted of a combination of criss-crosses, dots-and-dashes, wavy lines, hatched triangles, lozenges, etc. Dish-on-stand was a popular shape in this ware. The black-and-red ware was also noticed, though in smaller quantities, in association with a cruder variety with gritty texture. The other finds consisted of nearly ten thousand minute beads of steatite, found in a single pot, and a copper celt, besides blades, flakes and cores of the microlithic order. Period II was characterized by the lustrous red ware, mostly with a bright red slip, though in a somewhat coarser fabric and with a marked decline in the volume of decoration. The

black-and-red ware persisted. The pottery of Period III was marked by the domination of a very finely burnished black-and-red ware in a wide variety of bowls and dishes known in central and southern India, besides a plain red ware, which was a connecting link with the earlier Period, suggesting a continuity of occupation. The characteristic pottery of Period IV consisted of plain red ware and coarse black-and-red ware, though the latter declined in quantity. Period V contained extensive structures of rubble. Its distinctive pottery was the Red Polished Ware, which, together with nearly two thousand Gupta and Valabhi coins of copper and silver, helped in dating the period.

EXCAVATION AT NEVASA, DISTRICT AHMADNAGAR.—The resumed excavation at Nevasa, by Dr. H. D. Sankalia and Dr. S. B. Deo, on behalf of the Deccan College Post-graduate and Research Institute, completed the picture of cultural sequence in the Godavari-Pravara basin.

Besides the first two periods, belonging to the Stone Age and represented by the tools of Series I and II found in the gravel-deposits at the site (p. 4), four successive periods of occupation, with or without breaks, respectively called Periods III, IV, V and VI, were traced in the excavated area (pl. XIII). There was no trace of any fortifications.

*Period III,* separated from Period II by deposits of a brownish silt and black clay, represented a neolithic-chalcolithic culture, characterized by the use of microliths, stone celts and copper or bronze objects (pl. XIV), to a restricted degree, besides painted and plain pottery (fig. 1). The objects of copper-bronze included a chisel, a needle or poker and three beads, adding to the last year's meagre assemblage of a harpoon, chisel and bead. In spite of the knowledge of copper the tools were mostly of stone (chalcedony) and consisted of crescents, trapezes, triangles and pen-knife and straight-sided blades with fully-worked backs, representing a 'short blade' industry. Other objects included more than four hundred beads of burnt steatite and sling-stones. The neolithic element of the culture was attested to by the find of stone objects such as small anvils hammer-stones, unfinished as well as fully worked, and polished axes and an adze. A chisel, perhaps of this Period, was found in the later debris of Period V.

The houses had roofs supported on square or round pillars and floors built of gravel set in lime or lime-mortar mixed with burnt black clay.

Different burial-practices were in vogue (pl. XV). Adults were buried in a fully-extended or slightly-flexed manner in shallow pits lined with lime or in large jars placed horizontally in pits. The inhumation of children was fragmentary and in urns in a variety of ways, such as (i) in single urns covered by bowls, (ii) in double urns placed horizontally face to face, (iii) in double urns placed vertically face to face and (iv) in three urns, of which two were placed horizontally face to face and the third covered the broken bottom of one of the other two. The infantile skeletal remains consisted chiefly of skulls and ribs. The preferred orientation of the burials was north-south, though a north-north-east to south-south-west orientation was also noticed. The grave-goods consisted of several pots—small or big bowls, spouted vessels with flaring rims (pl. XVI) and vessels of several other shapes—all of them painted with geometric designs in black over a fine red-slipped surface, the common characteristic of the chalcolithic pottery. Interesting painted designs included the figures of deer and other animals painted realistically and in solid black; and graffiti and impressed designs included the figures of man, *pipal-leaves,* basket-patterns, etc. (pl. XVII). Every burial-pot bore a different graffito-mark. Next in order of frequency was the pale

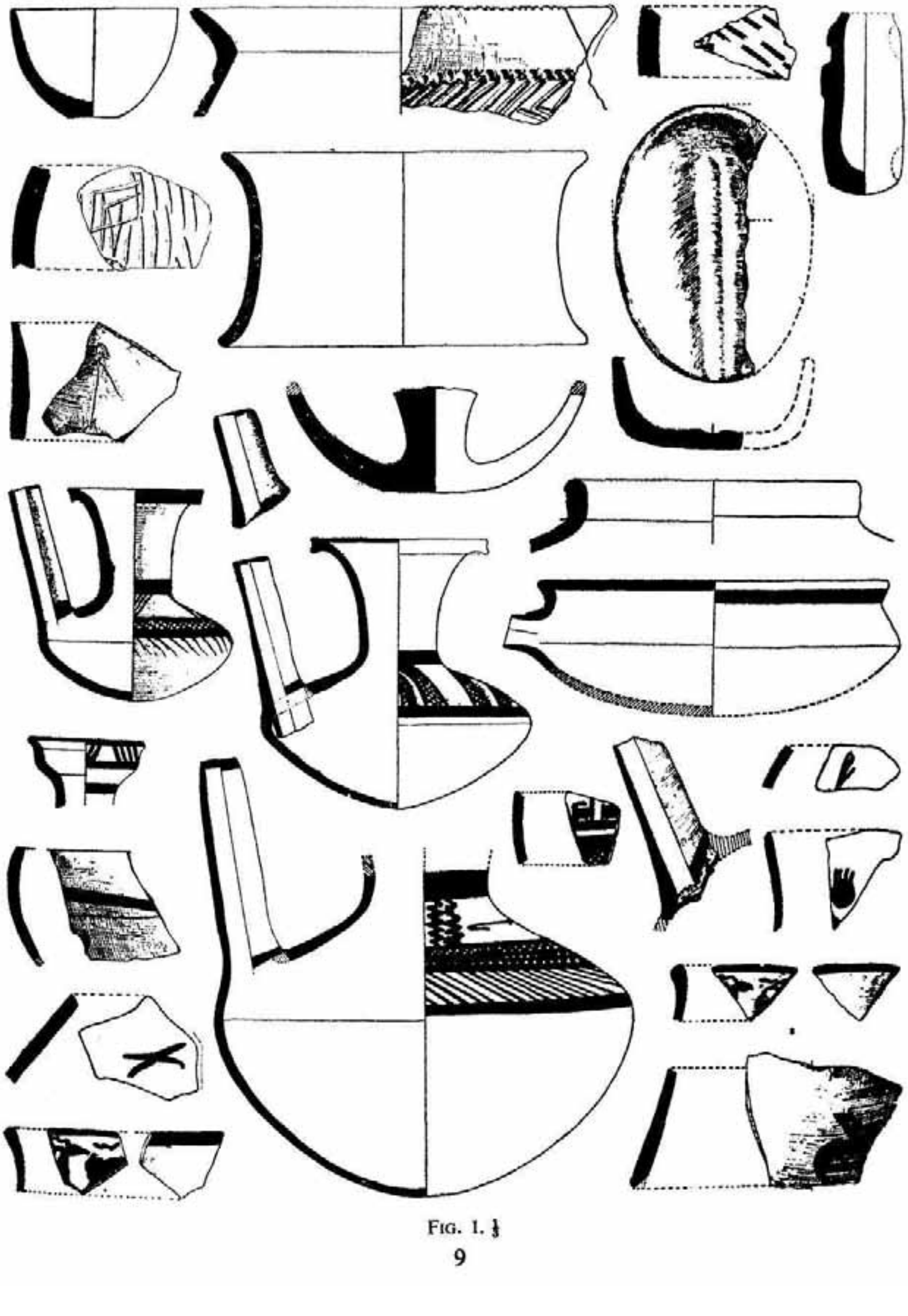


FIG. 1. ⅓

brown-and-black urn-ware, partly hand-made, and a fine glossy black but sturdy ware with post-firing red wash or painting, liable to rub off easily.

After the chalcolithic occupation the site remained unoccupied for a considerable time, indicated by the occurrence of a 2 to 3 ft. wide black layer, possibly the result of decomposition of the top of the chalcolithic strata, before the next settlers, of Period IV, inhabited the area.

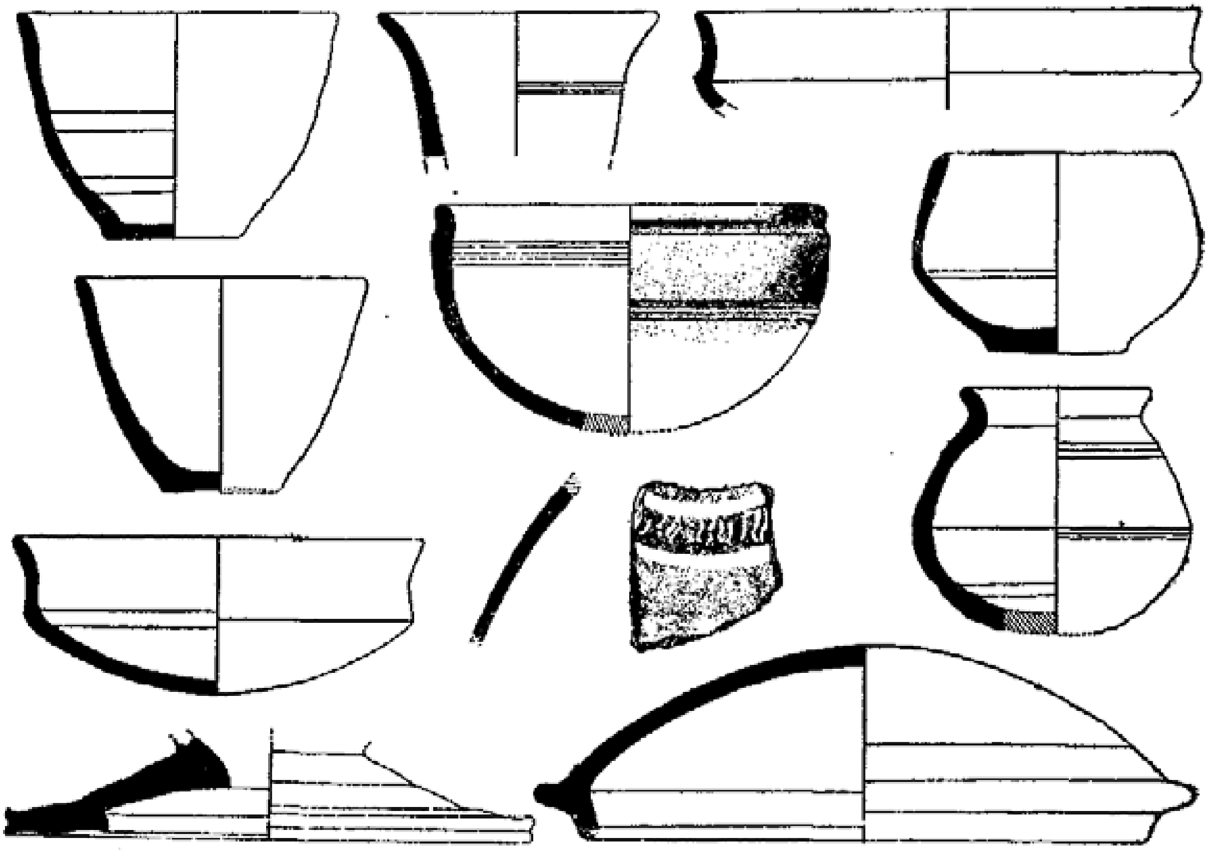


FIG. 2. ¼

*Period IV (early* historic or Satavahana) was characterized by sherds of the Northern Black Polished Ware (only three sherds), black-and-red ware (fig. 2), and Megaron ware (pl. XVIII A), dated by Sir Mortimer Wheeler to the first century B.C.

The houses of this Period were built of bricks of large size (1 ft. 11 in. X 10 in. X 3 in.) and had wooden posts for supporting roofs made of tiles provided with holes for inserting iron nails for fixing. The walls had hardly any foundation. The flooring was well-made of lime and pounded hemp, occasionally rendered smooth by plastering. A barn, built of bricks, laid in a 12-ft. deep pit, going down into the brownish silt, yielded abundant quantities of charred grains.

Objects of the material culture included beads of stones, terracotta and glass, shell bangles, terracotta figurines, flesh-rubbers, four-legged querns and millers of

stone and a unique ivory seal incised with several Buddhist symbols like the *triratna, svastika* and twin fish.

Nearly two hundred coins of potin, lead and copper of the Satavahana kings help to date the Period.

*Period V* (Indo-Roman) was marked by the use of amphorae and Red Polished Ware, suggesting a Roman association, besides black-and-red ware in smaller quantities. Furthermore, a bronze dish with omphalos-base, a terracotta votive tank, terracotta decorative masks and a few terracottas with typical head-dresses and hair-styles indicated a foreign influence. A distinctive group of rotary-querns (pl. XVIII B) was also significant. The upper stones of these querns were taller and therefore heavier than the lower and had two transverse slots at each side for the insertion of a handle for imparting the rotary motion. The iron objects consisted of shovels, pounders, arrow-heads, etc. The houses were built of bricks, 1 ft. X 6 in. x 2½ in., and had solid foundations made of stones and black clay. The floorings were made of hydraulic lime-mortar. Post-holes were also noticed.

The soak-pits were built of terracotta rings or wedge-shaped bricks, and some of them yielded burnt grains of beans, wheat, etc.

The next occupation, in *Period VI* (medieval), took place apparently after the lapse of considerable time, though this hiatus was not recognizable stratigraphically. It was a period of decline in the prosperity of Nevasa. The houses were built of undressed stones without any firm foundation. The finds included polychrome glass bangles, glazed pottery and celadon ware. Bangle-making in glass seems to have been a local industry.

EXCAVATION AT AHAR, DISTRICT UDAIPUR.—The Department of Archaeology and Museums, Government of Rajasthan, continued the excavation at Ahar under Shri R. C. Agrawala with a view to obtaining fuller details of the three cultures, of Periods I, II and III, found last year.

*Period I* yielded microliths consisting of blades and fluted cores, objects of copper and a distinctive black-and-red ware, painted with diverse designs in whitish lines, both on the exterior and interior. Other pottery consisted of a sturdy brown ware, hard-baked and with a metallic sound, a coarse red ware and another variety of painted pottery with black designs executed on a whitish or yellow surface, besides a plain coarse grey ware, which arrived at the site slightly later than the rest. The finds included carnelian beads, some of them etched. The houses (pl. XIX) were built of mud-bricks and stone chips.

*Period II* had a black-and-cream ware, painted with whitish dotted lines and a black-on-red or black-on-cream ware, the former exceeding the latter in quantity.

The area brought under excavation this year did not have any traces of Period III.

Though the typical Painted Grey Ware of north India was absent, the designs on the black-and-red ware of Period I were strongly reminiscent of those on the former. The large quantity of painted black-and-red ware, occurring throughout a deposit of considerable thickness, indicated its prolonged life. The significance of the site, particularly with reference to its bearing on the chalcolithic period of Indian archaeology, requires further investigation.

EXCAVATION AT NAGDA, DISTRICT UJJAIN.—The Excavations Branch, under Shri N. R. Banerjee, undertook the excavation with a view to obtaining a sequence of cultures in the region, with particular reference to the chalcolithic culture of central

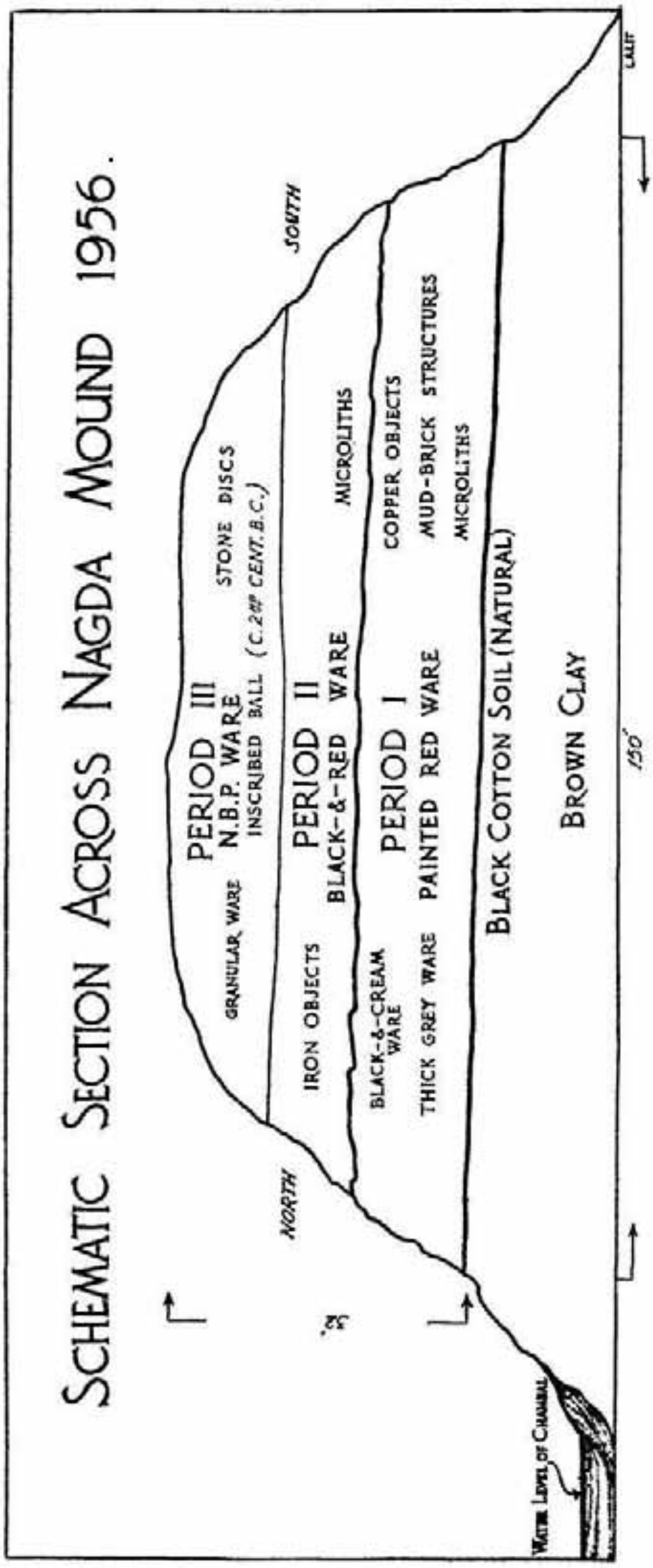

SCHEMATIC SECTION ACROSS NAGDA MOUND 1956.
PERIOD III
N.B.P. WARE
INSCRIBED BALL (C.2ND CENT. B.C.)
STONE DISCS
GRANULAR WARE
PERIOD II
BLACK-&-RED WARE
IRON OBJECTS
MICROLITHS
PERIOD I
PAINTED RED WARE
BLACK-&-CREAM WARE
THICK GREY WARE
COPPER OBJECTS
MUD-BRICK STRUCTURES
MICROLITHS
BLACK COTTON SOIL (NATURAL)
BROWN CLAY
NORTH
SOUTH
150'
35'
WATER LEVEL OF CHAMBAL
CLIFF

FIG. 3

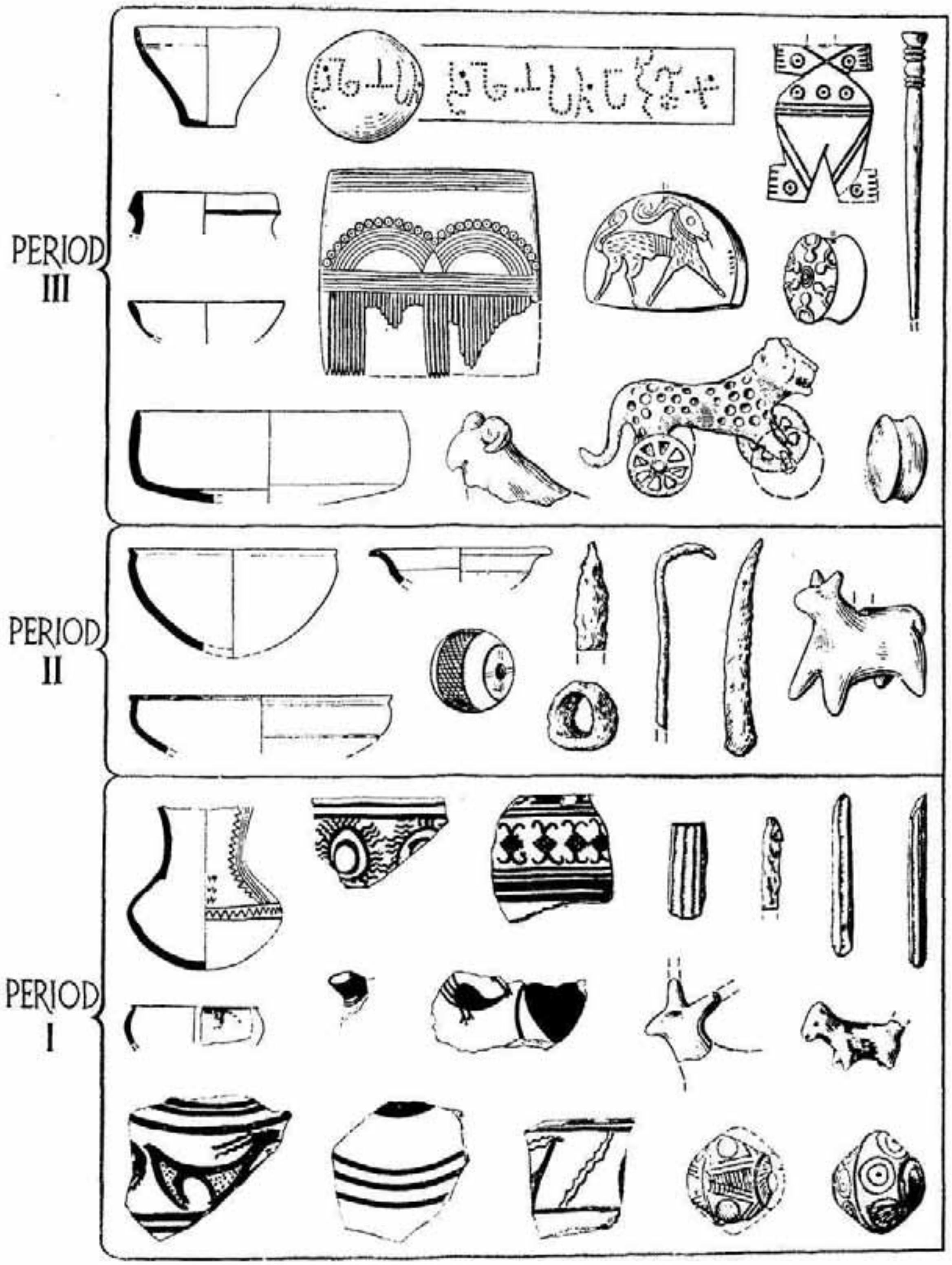



Fig. 4

and western India, relics of which had been previously found here by surface-exploration.

Situated on the east bank of the Chambal, the mound (pl. XX A) rises to a height of 90 ft. from the surrounding plains, of which occupational deposits were found to be only 32 ft. in depth, the rest being natural soil. The deposits belonged to three periods, named Periods I, II and III (figs. 3 and 4). The common alignment of the structures of all the periods indicated a continuity of occupation.

*Period I* (chalcolithic), represented by a deposit 22 ft. thick, was characterized by massive structures of mud and mud-bricks (pl. XXI), no burnt brick being in evidence. While most of the structures in the excavated trench were for residential purposes, the possibility of at least one of them being a bastion of a rampart cannot be dismissed.

The ceramics consisted mainly of red or cream-coloured pottery, bearing a variety of designs in black, mostly on the exterior surface (figs. 5-7; pl. XXII). Almost every kind of vessel, irrespective of size, shape and utility, was painted, indicative of the rich imagination of the people. The painted designs were mostly in black and rarely in reddish brown or chocolate. The designs comprised horizontal bands, occasionally spaced and filled with different motifs or otherwise connected, concentric semi-circles, connected loops, wavy lines both horizontal and vertical, radiating lines, filled and hatched triangles, triangles formed by groups of lines obliquely joining horizontal bands, sun-symbol in single or double and figures of antlers, spotted deer, peacocks, etc. Side by side, there existed a black-and-cream ware (fig. 7), occasionally painted with oblique or vertical strokes or dots, and a crude grey ware with blackish core. Plain pottery (fig. 8) was limited in quantity.

The other components of the culture included microlithic tools (pl. XXIII), of which a very large number was found, and fluted cores of chalcedony, quartz, carnelian, etc. The tools mostly comprised parallel-sided blades, one of the sides occasionally retouched and the working side often serrated. A few blades showed a crested ridge. It may be noted that microliths occurred in the later periods as well, probably as survivals. The use of copper in this Period was restricted. Other finds included stone sling-balls or pounders, terracotta beads, whorls and animal figurines.

There is no doubt that Period I of Nagda partakes of the characteristics of the chalcolithic culture of central-western India and the Deccan, the beginnings of which have been dated to about 1000 B.C.

*Period II,* more or less a continuation of Period I, was marked by the disappearance of the black-and-cream ware and the emergence of the black-and-red ware (fig. 8). Sherds with black-on-red paintings were rare. The buildings continued to be of mud or mud-bricks.

*Period III* again had mud and mud-brick structures of modest proportions, with a limited evidence of the use of burnt bricks, and cobbled roads. The pottery consisted of the Northern Black Polished Ware and other wares (fig. 8) known to be associated with it at other sites, together with a variety of a red ware studded with grains and named the 'granular ware' and storage-jars (pl. XXV A). The objects of daily use (fig. 4; pl. XXIV) included: terracotta flesh-rubbers; highly-polished stone discs with their clay prototypes, some of them with decorative designs; terracotta objects with incised designs (pl. XXV B); ivory pendants and hair-pins; bone styli and other objects; copper antimony-rods, rings, bangles, toys (e.g. a leopard figurine on wheels) and a ringed hollow object; stone pestles and mortars; and objects of iron, e.g. pans, etc.

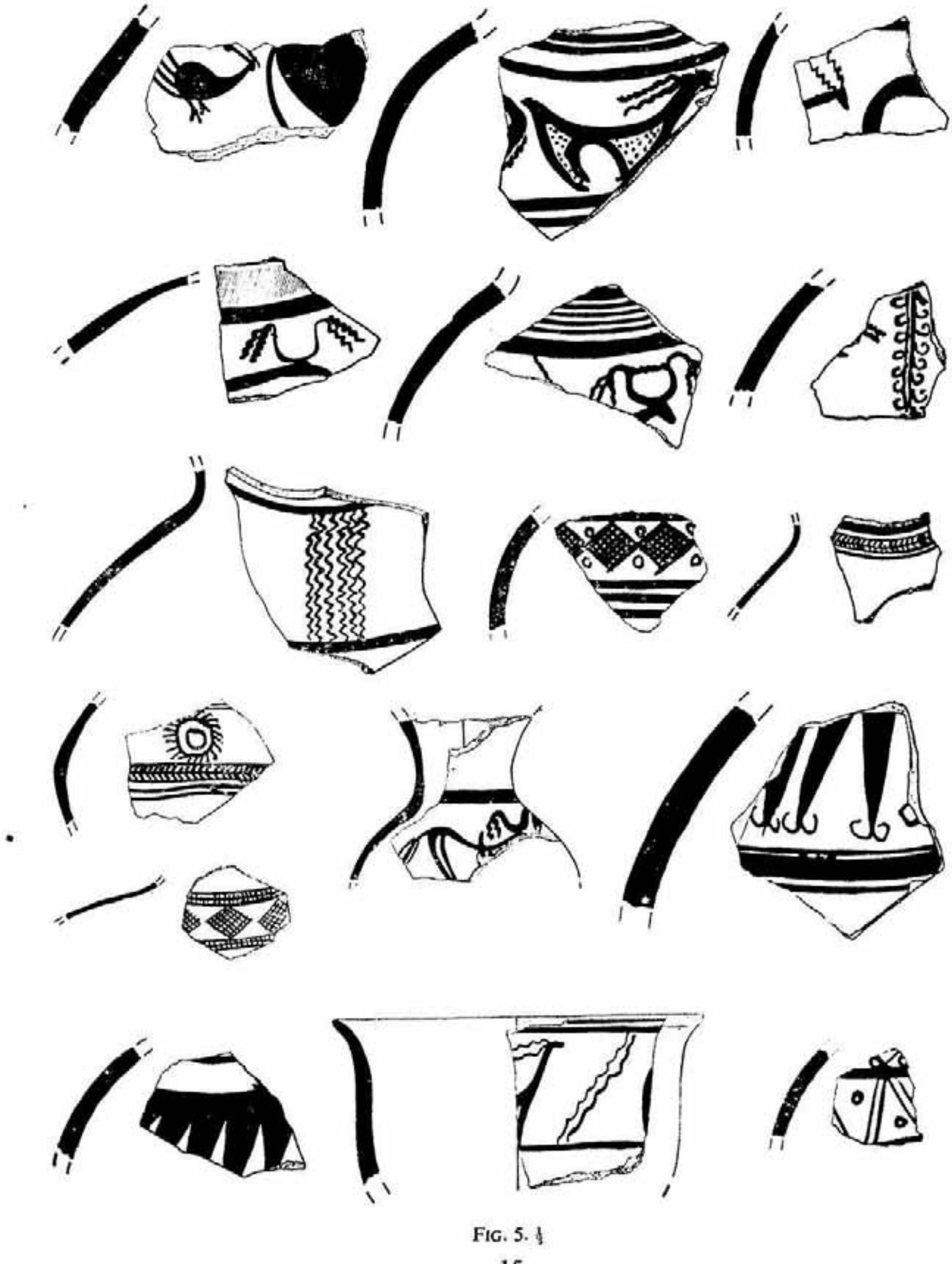


FIG. 5. ½

A potsherd (pl. XXV C) and a terracotta ball (fig. 4) from the upper levels of the Period bore inscriptions of about the second century B.C., indicating that the occupation of the site came to a close about that time.

EXCAVATION AT UJJAIN.—The excavation was conducted by Shri N. R. Banerjee at the extensive mound on the Sipra (pl. XX B) with a 35-ft. deposit above the natural Black Cotton Soil, now known as Garh Kalika and no doubt representing the ruins of a substantial part of the anciently-famous city of Ujjayini. The occupational deposits, as found in the excavation (pl. XXVI), could be roughly divided into two periods.

*Period I,* with 20-ft. thick strata, bore the Northern Black Polished Ware (absent in the earlier stages of the Period, when, however, the black-and-red ware was known) and associated wares. The other antiquities of the Period were: terracotta figurines, human and animal; objects of copper and iron; pestles and mortars of stone; potters' dabbers of stone; potters' stamps of terracotta; and polished stone discs with their terracotta prototypes. Though parallel-sided microlithic blades and fluted cores were not wanting, their number was meagre; the black-on-red painted pottery, characteristic of the chalcolithic culture, was absent in the excavated area. The structural remains were of burnt bricks as well as roughly-dressed stones (pl. XXVII A); ring-wells were present (pl. XXVII B).

To save the city from destruction, the first settlers on the site erected a massive wall of compact whitish clay laid in bands separated by sticky dark clay with charcoal. The wall, overlying a platform of a single course of burnt bricks of large size (1 ft. 4 in. X 1 ft. 1 in. X 3 in.), was laid deep into the yellow compact clay underlying the natural Black Cotton Soil. Owing to relentless floods, the rampart, even up to its upper parts, suffered badly, and only patches of it were found in the excavation here and there amidst mixed debris deposited by floods.

*Period II,* due to floods and other agencies, was equally disturbed but was found to continue till medieval times.

For the vast extent of the mound, which is in consonance with the importance of the city of Ujjayini during early and medieval times, the excavated trenches provide an inadequate index, and further work is called for.

EXCAVATION AT KANAUJ, DISTRICT FARRUKHABAD.—A limited excavation, by Shri K. K. Sinha on behalf of the Excavations Branch, at the mound representing the ancient city of Kanyakubja, an important political centre in north India from the times of Harshavardhana in the seventh century but with much earlier beginnings, revealed, through its 40-ft. thick deposit, four cultural periods (pl. XXVIII A).

*Period I* could be dated to 1000 B.C. and later by the find of a sherd of the Painted Grey Ware and a mass of red and black-slipped ware associated with it. There were no structures.

*Period II* had a single brick structure of large-sized bricks. From the find of the Northern Black Polished Ware and associated wares, the Period could be dated to 600 to 200 B.C.

*Period III was* divisible into as many as seven structural sub-periods, the structures being mostly of burnt bricks but occasionally of rubble as well. From the earliest levels of the Period came pottery, of red ware, with impressed designs and symbols typical of Kushan times. The terracotta figurines (pl. XXVIII B) showed a wide range: a male figure with its elbows forming round openings at the -sides, a well-made head with protruding eye-balls and hair with a flattish knot at the top,

crude figurines and a *satti-satta* plaque recall similar finds from Ahichchhatra; the last object, dated at Ahichchhatra to early medieval times, helps to fix the terminal date of the Period.

*Period TV* showed seven sub-periods, the buildings being mostly of small brick's known as *lakhauri.* Many structures were built in lime-mortar, and some were plastered with the same material. The bricks, glazed ware and other pottery of the Period indicated its late medieval date.

EXCAVATION AT KAUSAMBI, DISTRICT ALLAHABAD.—The Allahabad University continued the excavation at the Ghoshitarama area of Kausambi this year as well, under Shri G. R. Sharma, for completing the plan of the monastic complex.

The available evidence indicated a continuous occupation of the site from *circa* sixth century B.C. to sixth century A.D. through sixteen successive phases of structural activity. In its penultimate form, the monastery consisted of a square quadrangle lined with cells, with a verandah on the inner side enclosing the Main Stupa, and several other subsidiary *stupas,* the whole establishment enclosed by a boundary-wall (fig. 9).

The earliest occupation at the site was characterized by the Northern Black. Polished Ware and soakage-pits laid as shafts into the earth without the use of terracotta rings. In the next period, dated, on the basis of available evidence, to *circa* fifth century B.C., the Main Stupa was initially built (pl. XXIX). Additions were made to the Stupa at four different stages, making finally for its square shape with doubly-recessed corners. The most important of the additions was at the third stage, attributable to the third century B.C. Incidentally, it may be recalled that Hiuen Tsang credits Asoka with the construction of a *stupa* at Ghoshitarama. The fourth and last addition was effected during the last stages of occupation.

Unfortunately, however, the evidence of the structural growth of the monastic establishment during the first five phases of occupation was lacking, owing, apparently, to the destruction it had suffered prior to the sixth phase. It was possible, nevertheless, to obtain a clear picture of its gradual development from that phase onwards till the abandonment of the site. The walls of the monastery, as it stood at the beginning of the sixth phase, were built of bricks, 1 ft. long, laid widthwise. No addition was made in the next succeeding phase. It was considerably enlarged during the eighth phase, when cells, together with an inner verandah, were built for monks all along the perimeter of the quadrangle. The ninth phase witnessed the introduction of lime-plaster on the walls. The maximum growth of the monastery took place in the eleventh phase, during the rule of the Maghas, particularly of Bhadramagha, whose name was found inscribed on a jar.

Further changes came during the thirteenth phase, when an extensive boundary-wall was erected to enclose the entire monastery. The wall was 6 ft. wide on the northern, eastern and western (pl. XXX) sides but 13 ft. wide on the southern. An 11-ft. wide pavement flanked the southern wing. Furthermore, two parallel walls, 79 ft. apart, were erected in the south-eastern and south-western corners of the monastery for enclosing two newly-built *stupas* by rectangular enclosures. These *stupas* measured approximately 40 ft. X 36 ft. each.

The monastic establishment was destroyed by the Hunas, under Toramana, in the sixteenth and last phase; as a result of this, no clear traces could be obtained of the plan of the monastery as it had stood at that time.

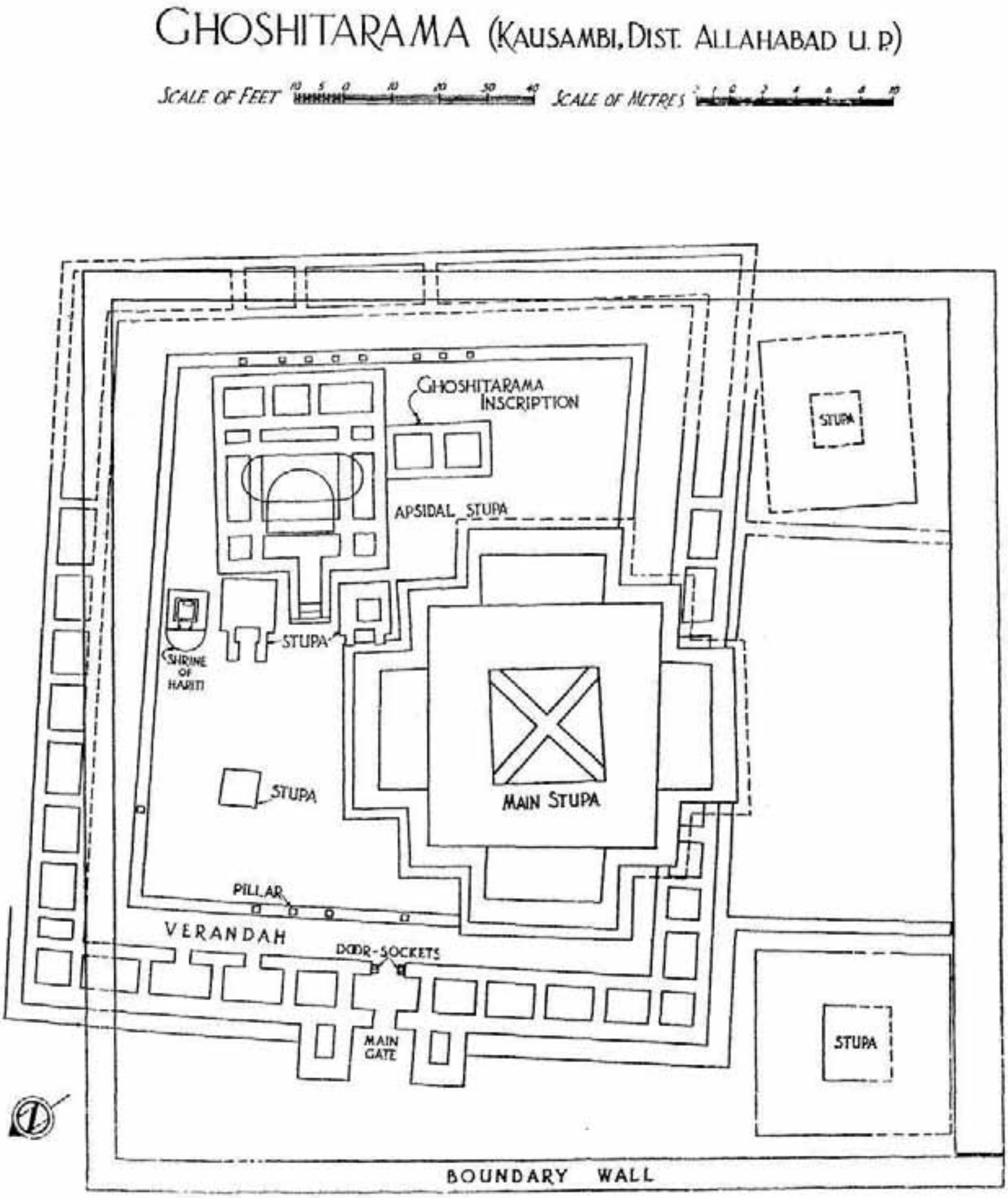

GHOSHITARAMA (KAUSAMBI, DIST. ALLAHABAD U.P.)
SCALE OF FEET
SCALE OF METRES
GHOSHITARAMA INSCRIPTION
STUPA
APSIDAL STUPA
SHRINE OF HARITI
STUPA
STUPA
MAIN STUPA
PILLAR
VERANDAH
DOOR-SOCKETS
MAIN GATE
STUPA
BOUNDARY WALL

Fig. 9

This year's excavation added to the collection of sculptures and terracottas, besides miscellaneous antiquities (pl. XXXI).

EXCAVATION AT PATALIPUTRA (PATNA).—Excavation was undertaken in four isolated areas in Patna City, viz. Gulzarbagh Government Press play-ground, Mahabirghat, Begam Haveli and Shah Kamal Road, by the K. P. Jayaswal Research Institute, Patna, under Shri Vijayakanta Mishra, to bring to light remains of the ancient city of Pataliputra.

Collectively speaking, five periods of occupation, ranging in point of time from *circa* sixth century B. C. to the seventeenth century A.D., with a gap of nearly one thousand years, between A. D. 600 and 1600, were found.

In *Period I (circa* 600 B.C.-150 B.C.) the pottery consisted mainly of the Northern Black Polished Ware in its popular shapes of bowls and dishes, big jars of coarse light-red ware, lipped bowls of coarse grey ware and incurved bowls and dishes of red ware.

Other objects included terracotta animal and human figurines (pl. XXXII A), stone vessels and bone points or styli. The terracotta animal figurines bore punched, stamped or notched circlets as decoration.

The structures, built of burnt bricks, often square in shape, and plastered with a mortar composed of sand and lime, came into existence later than the earliest occupation.

No traces of the earliest phase of occupation of the Period were, however, found at the Shah Kamal Road site. The earliest stratum here, overlying the natural soil, contained only a few sherds of the Northern Black Polished Ware without any other associated ware. However, a good number of polished sandstone pieces, apparently architectural members, and a mutilated couchant *nandi* found in the stratum recalled Mauryan art. The possibility of the existence of a polished pillar, free-standing or otherwise, at this site seems to be considerable, in view of the discovery of sandstone pieces, including one, 6 ft. by 3 ft., showing the typical Mauryan polish and bearing the bead-and-reel pattern (pl. XXXII B). From a house in this area architectural fragments with Mauryan polish had previously been recovered by Dr. D. B. Spooner. The stratum, capped by a layer of ashes, charcoal and lime, might, therefore, represent a Mauryan occupation destroyed by a great conflagration. This confirms the Kumrahar evidence that a mighty fire destroyed Pataliputra prior to 100 B.C.

*Period II (circa* 150 B.C.-A.D. 100) was represented by structural remains of bricks, measuring on an average 17 in. X 11 in. X 1¾ in., terracotta soak-wells, narrower at the bottom than at the top, being built of rings of two different sizes, and a few sherds of the Northern Black Polished Ware and sherds of a distinctive red ware and coarse grey ware. Two sherds bore symbols occurring on punch-marked and cast coins, a number of Kausambi 'lanky bull' type of coins, tiles indicating the nature of house-roofs, beads of semi-precious stones, terracotta figurines, pendants and ear-ornaments, stone and terracotta sealings with symbols or legends, bone arrow-heads and pins, etc.

*Period III (circa* A.D. 100-300) was represented by bowls and rimless carinated vases in red ware and coarse grey ware, miniature vases (pl. XXXIII A), terracotta figurines (pl. XXXIII B and C), ornamental terracotta objects (pl. XXXIV A), copper objects consisting of antimony-rods and spoons, and a hollow amulet of gold (pl. XXXIV B). The last object was particularly interesting, as it was fashioned after one of the coin-types of Huvishka, showing the bust of the king with the legend

*Shaonano Shao Ooeshki Koshano* on one side and the Roman goddess Ardochsho on the other with a Greek legend giving her name.

*Period IV {circa* A.D. 300-600) was marked by plain red and other none too distinctive wares, terracotta figurines of Naigamesa, animal figurines and beads of various shapes.

*Period V* (A.D. 1600 and later) yielded glazed ware, a silver coin of Shah 'Alam, terracotta figurines with typical Muslim and Maratha head-dresses, ivory dice, glass beads, and diverse objects of copper and iron.

EXCAVATION AT KUNNATTUR, DISTRICT CHINGLEPUT.—The Southern Circle, under Shri V. D. Krishnaswami and, at the initial stage, Shri B. Saran, excavated at the megalithic site with a view to linking up the megaliths with a habitation-site in the neighbourhood and obtaining fresh light on megalithic types.

Three megaliths of the following types were excavated, viz. a cairn-circle (Megalith I), which was found, on opening, to enclose a pit, a slab dolmenoid cist (Megalith II) enclosed by a stone circle and a monument (Megalith III) of which the capstone was flush with the cairn-packing but which was found to be a pit entombing a terracotta sarcophagus sealed by a covering slab or capstone and surrounded by a small circle of boulders. The process of interment represented in these burial-monuments was in general agreement with the mode of megalithic burials as observed elsewhere.

*Megalith I* contained more than twentysix pots, besides seven objects of iron, mostly weapons of war. No trace of any skeletal remains was found. The orientation of the rectangular pit did not conform to the usual east-west axis.

*Megalith II* was almost totally damaged and contained only broken fragments of an iron sword, a terracotta whorl-bead and a copper bell.

*Megalith III* (pl. XXXV) proved to be a new type of monument not met with previously in the District, inasmuch as it contained a sarcophagus laid into a pit, neatly sealed by a capstone and enclosed by a compact circle. This shows that surface-indication, which has hitherto been the tentative basis for the classification of the monuments, is not invariably a safe guide.

The sarcophagus in Megalith III, which was covered with a lid, contained two coiled bracelets of iron and very meagre skeletal remains consisting of a broken bit of a radius and a fragment of a deciduous tooth of a youth. Thirteen pots were found huddled along the external sides of the sarcophagus. Neither the sarcophagus nor the pit was oriented east-west.

The pottery in all the three megaliths conformed to the usual types of the Black-and-red, black and red- megalithic wares. The excavation is still in progress, and the associated habitation site is yet to be tackled.

EXCAVATION AT NAGARJUNAKONDA, DISTRICT GUNTUR.- The Nagarjunakonda Excavation Project, constituted in 1954, uncovered, under Dr. R. Subrahmanyam, fifteen monasteries, eight *stupas,* a medieval temple, and a *ghat* on the Krishna bank, together with a brick-built stepped embankment leading to what was apparently the palace-area. This year's work accounted for more monasteries, *stupas,* structures in the palace-area, pillared pavilions, etc.

The inscriptions discovered in the course of excavation gave the name of a new king of the Ikshvaku dynasty, viz., Rudrapurushadatta, besides king Srivarman of the Brihatphalayana-gotra. It is worth mentioning that one of the inscriptions gave the name of the Buddhist sect *Mahaviharavasin* of Theravada-Vibhajyavada which constituted the third division of Theravada of Ceylon at Nagarjunakonda, the other

two divisions being Jetavaniya and Abhayagirivasin. The structural remains related not only to the Ikshvakus but also to a period preceding them by a century or so and following them by at least two centuries.

*Site V-6,* with a full-fledged monastic establishment, comprising a four-winged monastery, a *stupa,* a *chaitya-griha* and three votive *stupas,* was completely exposed. One of the slabs found near the entrance into the *stupa* was carved with a pair of *Buddha-pada,* embellished with the symbols of a pair of fish, tree, *purna-ghata, svastika, dharma-chakra, ankusa,* etc. (pl. XXXIX C). On it was an inscription ascribable to the middle third century recording that the sacred feet were of Buddha and were designed and consecrated by or for the *Mahaviharavasins* of the Theravada-Vibhajyavada school of Ceylon in a *vihara* described as *Dharana-vihara* situated on the Praveni. The *Mahaviharavasins* are described as adepts in reading the marks on the human body and fixing horoscopes which constitute the eighth *sasana (abbhuto)* of the *navanga* promulgated by Buddha.

*Site VIII* revealed a brick-built *stupa* of the shape of a wheel on plan, consisting of a central hub and eight spokes with a basal diameter of 50 ft. The *stupa* contained two small relic-caskets, one of copper and another of debased silver, besides gold flowers, pearls, semi-precious stones (pl. XXXIX B) and bone-ash. One of the pots found in the area bore the imprint of the *triratna* symbol.

*Site XI* had a three-winged 'U'-shaped monastery, consisting of eight cells on each side, complete with an apsidal *stupa-chaitya* and a pillared hall. Of great interest was an inscribed frieze of limestone with an inscription reading *{Bha)gavato mulache-(ti)ya(ye) patithapita* and recording the consecration or the setting up of something (probably the inscribed frieze itself) in some edifice assigned to the. *mula-chaitya* of Buddha. This raises the question of the location of the *mula-chaitya* or the primordial *chaitya.*

*Site XIII* revealed the four wings of a *vihara* with a pillared hall in the quadrangle, besides a *stupa-chaitya,* a votive *stupa-shaped* circular chamber with a *chaya-khambha* in it (pl. XXXVI). On the *chaya-khambha* (pl. XXXIX A) is carved the scene of Prajapati Gotami, the foster-mother of Buddha, holding Buddha (as child) in a scarf. Below it was an inscription which acquaints us with the word *chaya-khambha* in a manner that brings out the idea that it is a recapitulative pillar or an epitaph. Besides recording a complete genealogy of the Ikshvaku kings (Chantamula, Virapurushadatta, Ehuvala Chantamula and Rudrapurushadatta) who bear the Kshatrapa tendentious title *svami,* it establishes the relationship of a great Ikshvaku queen (Mahadevi) in whose memory one Srivarman of the Brihatphalayana-gotra raised the epitaph *(chaya-khambha).*

*Site XXI* comprised pillared halls right on the river-edge with no traces of *chaitya* or *stupa* constructions. Their orientation was not helpful beyond suggesting that they were probably a place of popular assemblage near water-side. Here were found conch-shells and lead coins of the Ikshvakus. Of particular interest were two limestone pillars, 7½ ft.X l0 in. each, of a *torana.* They are in different parts such as cubical bases with the carving of elephant (frontal view), octagonal fluted belt with figures of children camouflaged amidst foliage, children fighting with rams, cocks, etc., children playing with birds, bears, bulls, deer, horses and lions, octopus, foliated serpent-hoods and the Greek acanthus, a central cylindrical part with the designs of full-spread conventional lotus with six petals and the capital with lotus *cyma recta* and meandering foliage. The top of the pillar is surmounted by elephants

and winged lions, both recumbent and prancing. On stylistic grounds, these pillars are probably of the late third or fourth century A.D.

At *Site XXV*, in front of the usual monastery was a *mahachaitya*, circular outside and inside, with a maximum diameter of 27 ft. The centre (6 ft. dia.) was solid. The spokes were six in number and in each bight a begging bowl was discovered located in a central alignment and contiguous to the outer periphery.

*Site XV* yielded the remains of a three-winged monastery (pl. XXXVII). The eastern wing had eight cells, while the southern and northern wings had each five cells, the remaining space being occupied by a votive *stupa*, one in the southern wing and the other in the northern wing. In the "centre was the *mandapa*. To the west of the monastery lay two apsidal *chaitya-grihas* with a *dagaba* in each. The apsidal *chaitya* on the north side actually rested on the remains of the earlier *stupa* of bricks. Of particular interest was the location of two votive *stupas* within the monastic precincts. Evidently the monastic unit here included a *mahachaitya*, probably on the west, awaiting excavation. Among the finds, a few lead coins of the Ikshvakus suggest an Ikshvaku date for the monastery.

*Site V-2* revealed a pillared pavilion with floors paved with stone slabs and walls of bricks.

*Site V-4* comprised on the face of it a low mound with a pillared hall at its lower level to the east. In the pillared-hall area, at the lowest level, in the layer below that on which the pillars themselves had been erected, was discovered a memorial pillar-inscription in mixed Sanskrit-Prakrit, clearly belonging to early fourth century A.D. It records the erection of the pillar to recapitulate the valour of Sri Chantamula, who was a commander and, besides having a big following, was one that could control the pride of the enemies and also one who captured the elephant of Dilibaka. This Chantamula is to be distinguished from the Ikshvaku Chantamula as he is said to belong to the family of the Kulahakas. He was a great warrior and met his death in an army-camp *(skandhavara)*. The valuable information offered by the inscription is sustained by the carving in profile on the slab, above the inscription, of a magnificent elephant standing against the background of lotuses and ridden by a king, probably the Chantamula of the inscription with an attendant behind him holding the parasol and *chamara*, necessary regalia of soyereignty. The import of the expression *Dilibaka-hathigahakasa* in the inscription is borne out by the king holding an *ankusa* over the head of the elephant.

In *Site V-7* was recovered a limestone slab (broken), 1 ft. 10 in. X 1 ft. 5 in. bearing the figure of Mahasena's *Sakti* as a female standing in *samabhanga*, with her fight hand holding a trident, and a sword held firmly at the hilt by her left hand posed in *katyavalambita*. The goddess has the characteristic ornaments of the Amaravati school including a waist-clasp. An umbrella and a banner of peacock's feathers are shown in the background, the latter standing significantly for the *mayura* association of Mahasena. When we remember that the Nagarjunakonda inscriptions include women such as Atavi Chantisiri described as *Mahatalavari* and *Mahasenapatini*, it will be easy to identify the goddess as the *Sakti* of Mahasena in the veritable role of a commander of armies." The Ikshvakus declare themselves as *Virupakshapati-Mahasena-parigrihita*. On stylistic grounds, the carving may date from the third century A.D.

The palace-site comprised two areas, one including stepped and balustraded *ghat* approaching the river Krishna (pl. XXXVIII) and the other a continuation of the

zigzag stepped embankment of brick, north of the *ghat-areas,* perhaps for use by royalty with retinue. Some of the covering slabs of the *ghat* bore small inscribed labels such as *Venisiri* and *Asala* and mason-marks such as bow-and-arrow. A few lead coins, with the symbol of an elephant with raised trunk and worn-out legends tentatively read as Siri *Virapu(rishadata)* and *Siri Chata(mula),* were found in this area.

A thick masonry wall, apparently of the medieval period, was found superimposed on the *ghat-slabs.* A copper coin, presumably of the Qutb Shahi period, and another of a Saluva ruler (Narasimha ?) of Vijayanagara bearing the Ganda-bherunda were excavated from the upper strata.

Apart from lead coins, largely of Chantamula and Virapurushadatta, a number of interesting objects such as stone sculptures, stucco and terracotta figurines (pl. XL) and a wide variety of beads of agate, jasper, carnelian, shell, bone, glass and terracotta were found.

EXCAVATION AT SIRPUR, DISTRICT RAIPUR.—The excavation at Sirpur, commenced last year by Dr. M. G. Dikshit under the auspices of the Saugar University, was resumed this year by the Department of Archaeology, Madhya Pradesh, under the same officer. Four sites, viz. the habitation-area, monastery-area, *svastika-shaped* monastery and fort, were taken up.

The excavation in the *habitation-mound* revealed three periods of occupation. The earliest occupation, of Period I, dated back to the last quarter of the fifth century, as indicated by a fragmentary gold coin of king Prasannamatra of the Sarabhapura dynasty. Period II, dated to about the seventh century, witnessed a large-scale structural activity, attested to by several brick and stone structures. Period III, attributed to the eleventh century and after on the basis of one hundred and six copper coins of Ratnadeva of the Ratnapura branch of the Kalachuri dynasty, comprised structures built out of the materials of the earlier period—as many as fortythree residential rooms were exposed—and a large quantity of polychrome glass bangles, suggesting a local industry.

A large *monastery* (pl. XLI) was found to the south of the cluster of monasteries. It had an open courtyard at the centre flanked on the sides by four wings, each containing three rooms and a verandah facing the courtyard (pl. XLII A), arranged in the shape of a *svastika. (The* figure of a seated Buddha, 8 ft. 6 in. high, with an oval nimbus and in *bhumisparsa-mudra* (pl. XLIII A) was enshrined in the central room of the wing facing the main entrance. An exquisite image of Padmapani on the pedestal enhanced the beauty of the shrine. The south-west corner of the courtyard had a red sandstone sculpture of Hariti.)

The monastery shared with those of comparable date common architectural features like the location of the staircase in one corner and a concealed room in the monastery, access to which was gained through a narrow opening in the walls. A similar, though smaller, monastery was found to the east of the main temple, excavated last year.

In the *monastery-area* were found two more *viharas,* IV and V (the latter illustrated, pl. XLII B), on plan similar to the three discovered last year. The *viharas* had each a spacious verandah in front, a hall in the middle and a row of cells at the back, the central hall containing a brick-built stepped pedestal for a large statue of Buddha and images of ancillary deities, several of them found fallen and mutilated on the floor. (The deities represented were Avalokitesvara, Tara, Manjusri and the like, inscribed with the Buddhist formula *ye dharma,* etc., in characters of the seventh-eighth century:)

These Buddhist monasteries appear to have been appropriated by Saivite monks during the medieval period, for a very large number of crude plaques representing Siva-Parvati, Ganesa and Mahishamardini were found in later deposits.

The associated antiquities included locks and lamps, votive seals and tablets (pl. XLIIIB) bearing sacred texts, two small images of Kubera, a fine chlorite image of Manjusri, a terracotta plaque depicting a twelve-armed Avalokitesvara and a small Chinese copper coin, circular in shape and with a square hole at the centre, attributed to Kai Yuan (713-41) and showing that Chinese visitors were attracted to this Buddhist centre.

The subsequent occupation of the temple by Saivites in the medieval period was proved by the find of a few Brahmanical plaques.

A limited excavation of the area identified as a *fort* by the obvious existence of a quadrilateral enclosure, measuring 250 X 220 yds., revealed that the fort-walls, built of stone, were 16 ft. broad and over 12 ft. in height. The prevalence of polychrome bangles and other objects in the stratum immediately below the top-soil indicated the possibility of the structure being of Kalachuri and later dates.

EXPLORATION IN TAMILNAD.—An exploration of South Arcot, Tanjore and Tiruchirappalli Districts was undertaken by Shri B. Saran on behalf of the Southern Circle.

A tour in South Arcot and Tanjore Districts led to the discovery of a large number of urn-field sites in different stages of exposure and spoliation, mostly containing pyriform urns and associated black or Black-and-red pottery, typical of megaliths, strewn on the surface or in exposed sections, though the urns were without any real megalithic appendage. Such sites were *Nanjalur* and *Kattumannargudi* both in Taluk Chidambaram, *Kumaramangalam,* Taluk Vriddhachalam—all in District South Arcot—and *Therazhandur,* Taluk Mayavaram, *Kandhahai,* Taluk Nannilam, *Pittachcheri,* Taluk Nannilam, *Perumkadambalur,* Taluk Nagapattinam, seemingly associated with a habitation-site of the megalithic culture, and *Palaya-gandharyakottai,* Taluk Oorthanadu, with three megalithic stone circles—all in District Tanjore.

Of the other explored sites, *Nattamedu,* Taluk Cuddalore, District South Arcot, yielded evidences of Roman association in the form of sherds of the well-known Rouletted Ware, conical bases of amphorae and fragments of dishes or shallow bowls with inturned internally-beaked rim.

An examination of the surroundings of *Gangaikondacholapuram,* Taluk Udaiyarapalayam, District Tiruchirappalli, the capital of Rajendra I (1011-44) surnamed Gangaikondacholadeva, the builder of the Brihadisvara temple here, resulted in the tracing of the hitherto-undetected remains of a massive rectangular fortification in the trail of the remains of what was once a flourishing city. Though the ruins were entirely covered with debris and vegetation, there were indications of a moat surrounding the defence-wall, built of bricks on a lateritic base. The fort measured 6000 ft. north-south and 4500 ft. east-west. Within the fortification was a smaller rectangular enclosure, also brick-built, possibly marking the citadel and measuring 1300 ft. north-south and 1700 ft. east-west. The Brihadisvara temple was found to be outside its north-east corner, separated from it by a perennial stream called the Karuvattu.

An intensive examination of the neighbourhood of *Tanjore town* led to the discovery of traces of an old rampart of the ancient city to a length of about 4 miles, curving in an elliptical shape towards the western side of the present town, enclosing the Tanjore fort and the Sivaganga little fort within t he former. Though the date of the construction of the rampart could not be determined, it was apparently the earliest in the series of

defences protecting Tanjore, and it is interesting to note that the Brihadisvara temple was located within it. The rampart was erected by the excavation of the earth down to the bed-rock, thus forming a channel all round to serve as a moat, and heaping up of the excavated earth on all sides in the interior, thus to form a defence-wall; its top was lined with blocks of stone quarried from the bed-rock. The maximum basal width of the rampart was 190 ft. and its height 20 ft.

# 3. EPIGRAPHY

## A. SANSKRITIC AND DRAVIDIAN INSCRIPTIONS

INSCRIPTION OF ASOKA, BHUIGAON (SOPARA), DISTRICT THANA.—A broken part of an Asokan inscription was discovered by a school-boy and was brought to the notice of Shri N. A. Gore, Assistant Secretary and Librarian, Bombay Branch of the Royal Asiatic Society. On examination, it turned out to be a damaged version of the Ninth Edict, a part of the Eight Edict from the same place being already known. It is now almost certain that Sopara contained a complete set of the Rock-edicts of Asoka.

INSCRIPTION ON WOOD, BHAJA, DISTRICT POONA.—One of the wooden ribs in the ceiling of the *chaitya-cave* was noticed by Shri Shankar Das, Archaeological Engineer, to contain inscriptions. One of them (pl. XL1V A) is read by Dr. B. Ch. Chhabra, Deputy Director General of Archaeology, as *Dhamabhagasa pasado* in characters of the second century B. C, thus fixing the date of the excavation of the cave.

Of the numerous inscriptions examined by the Government Epigraphist for India,, the following were noteworthy.

STONE VESSEL INSCRIPTION, KAILVAN, DISTRICT PATNA.—The vessel (pl. XLIV B), found in a field, bears an inscription in characters of about the second century A.D., referring to a king named Arya-Visaghamitra (Visakhamitra). It is dated in the year 108 of an unspecified era. The ruler, unknown before, seems to have belonged to the Mitra dynasty of Magadha, other members of which are known from epigraphical sources.

COPPER-PLATES OF SATRUDAMANA, PEDDADUGAM, DISTRICT SRIKAKULAM.—The grant, inscribed in archaic characters of the southern variety and assignable to the early part of the fifth century, in the ninth year of Satrudamana, an unknown ruler, was issued from Simhapura, evidently the same place whence were issued the grant of certain other rulers of the fifth century claiming to have been lords of Kalinga and which has been identified with Singupuram near Srikakulam. Satrudamana has been described in the grant as *Bhattaraka-pada-pratigrihita,* which proclaims his subordinate position.

COPPER-PLATES OF PRITHIVI-MAHARAJA, PARLAKIMEDI, DISTRICT GANJAM.—The character was issued from the town of Virajas by Prithivi-maharaja, son of Vikramendra and grandson of Ranadurjaya in the fortyninth year of his rule. This is the second known record of the ruler and bears characters of the southern variety of the seventh century.

INSCRIPTION MENTIONING JATASIMHANANDIN, KOPPAL, DISTRICT RAICHUR.—Engraved on the same rock as has on it the edicts of Asoka, the inscription, palaeographically of the tenth century, records the incision of the foot-marks of an *acharya,* Jatasimhanandin, who may be the same as the seventh-century Jaina teacher of that name, the author of the *Verangacharita.*

.PILLAR-INSCRIPTIONS, ELLESWARAM, DISTRICT NALGONDA.—Two stone pillars, near a temple-group, almost opposite Nagarjunakonda, on the left bank of the Krishna,

were found to bear a number of pilgrim-records in early Chalukyan characters of the eighth and ninth centuries. Another record, in florid Nagari characters of about the tenth century, mentions prince *(rajaputra)* Uggavala of Varendrivishaya (north Bengal).

EASTERN GANGA CHARTERS, GALLAVALLI, DISTRICT SRIKAKULAM.—One of the two copper-plates was issued by Manujendra or Manujendravarman in the Ganga year 393 *(circa* A.D. 890), probably during the life-time of his father Deyendravarman, the object being the grant of certain villages in favour of the deity Kaunduka-Gundesvara. An endorsement on the document records another land-grant made by Devendravarman in favour of the same god. The second copper-plate belongs to king Rajaraja I Devendravarman (1070-78) of the imperial branch of the Eastern Ganga dynasty of Kalinganagara, issued in the Saka year 998 (A.D. 1076).

INSCRIPTION OF CHALUKYA TRIBHUVANAMALLA, HIRE-MANUR, DISTRICT GULBARGA.—The record, dated in the year 45 of the Chalukya-Vikrama era (A.D. 1120), records that Gangarasi committed suicide at the callous destruction of a Siva temple at Maniyur and that *mahamandalesvara* Ahumallarasa and Perggade Adityanayaka, along with thirtytwo *mahajanas* of Maniyur, made a land-gift to his son Singarasi.

CHARTERS OF THE CHANDELLAS.—Three copper-plates were received for examination from the Bharat Kala Bhavan, Banaras. One of them issued by king Madanavarman (1129-63) in the Vikrama year 1192 (A.D. 1136), mentions *rajni* Lakhamadevi, *maharajni* Valhanadevi and *rajni* Chandeladevi and records a land-grant in favour of several Brahmanas. Both the other plates were issued by king Paramarddin (1167-1202) and are respectively dated in the Vikrama year 1239 (A.D. 1182) and 1247 (A.D. 1191). The first of them records the grant of a village to a Brahmana whose family hailed from Pataliputra and the second the grant of another land-piece in favour of the same person, the original home of whose family is this time given as Patalipura.

INSCRIPTIONS OF THE TIME OF YAJVAPALA GOPALA, BANGLA, DISTRICT SHIVPURI.— A dozen inscriptions on hero-stones, dated in the Vikrama year 1338 (A.D. 1281), record the death of certain persons in a battle fought on the bank of the Valuka or Valua on behalf of the Yajvapala king Gopala of Nalapura (Narwar) against the invading army of the Chandella king Viravarman. As the plain of Bangla lies below the hill-fort of Narwar, the records show that the Chandella army succeeded in reaching the very heart of the Yajvapala kingdom.

HOYSALA INSCRIPTION, SRIRANGAM, DISTRICT TIRUCHIRAPPALLI.—A fragmentary inscription on the walls of the *kottaram* (granary) of the Ranganathasvami temple cites the cyclic year Khara as the fifteenth regnal year, apparently of the Hoysala king Vishnuvardhana. The cyclic year evidently corresponds to A.D. 1111-12; thus, the initial year of the king's rule would be 1096, four years earlier than the hitherto-accepted date. The inscription is also important as being the earliest Hoysala record found as far south as Srirangam.

INSCRIPTION OF MUPPIDI-NAYAKA, NARASIMHAKONDA, DISTRICT NELLORE.—Engraved on the inner wall of the central shrine of the Narasimhasvami temple, it introduces Muppidi-Nayaka as the commander of the Kakatiya ruler Prataparudra and records a gift made by the local authorities to the deity Karunisvaramudaiya-nayanar of Nellur, *alias* Vikramasingapuram, for the success of his arms. Muppidi-Nayaka is known to have put to flight the rulers of the south and installed Manavira as the governor of Kanchi in Saka 1238 (A.D. 1316).

TWO CHARTERS OF GAJAPATI RAGHUDEVA.—Both belonging to prince Raghudeva, who was the son of Parasurama, the younger brother of Kapilesvara, the founder of the Surya-vamsa of Orissa, the earlier of them records the grant of a village on the occasion of a lunar eclipse in Saka 1376 (A.D. 1454) and the later the grant, made two years later, of Raghudevapura on the Goda, i.e. Godavari. The ancestry of Kapilesvara is now known for the first time, as Raghudeva is said to have been the governor of Rajamahindra under his uncle Kapilesvara, who is mentioned as the grandson of Kapilesvara I, son of Jagesvara and younger brother of Balarama.

MISCELLANEOUS INSCRIPTIONS.—Of the other examined inscriptions, mention may be made of the following. A fragmentary Prakrit inscription from *Nagarjunakonda* refers to a person who appears to have attained profound knowledge in his own *(saka=svaka)* doctrine *(samaya)* as well as in that of others *(para-samaya).* A Kannada epigraph from *Koppal,* belonging to the Rashtrakuta Indra III, mentions his Kadamba feudatory, *mahasamanta* Aliyamarasa, who was the 'lord of Banavasi' and constructed a *basadi* at the place in Saka 811 (A.D. 889). An inscription of Vikramachola (1118-35) from *Srirangam* mentions Tillaialagiyar as the mother of the empress Lokamahadevi. Another late inscription from the same place records the endowment for a feeding-house *(Ramanujakutam)* by a member of the Erumaikkaranayakkanmar community.

The Superintendent, Western Circle, found eight fragmentary inscriptions in the course of clearance of and repairs to the monuments of *Chittorgarh,* the earliest of them assignable to the tenth century. Another mentions Rana Kumbha and Chitrakuta (Chittor) and records the erection of a temple by that ruler. A third fragment represents the *prasasti* of a line of Jaina monks belonging to the Mulasangha, Nandisangha, Balatkaragana, Sarasvatagachchha and Kundakundanvaya sects.

The Director, Kannada Research Institute, noticed four rock-cut inscriptions in the *Shidalphadi cave* near Badami, District Bijapur, the largest of which eulogizes Kapperabhatta, also mentioned in an inscription from Badami. There were also traces of seven painted records, of about the seventh century, on the north wall of the cave.

The Director of Archaeology, Mysore State, collected thirty inscriptions, including four copper-plates. Of the latter group, from *Kumsi,* District Shimoga, the earliest pertains to the Kadamba ruler Mrigesavarman and records a grant to Brahmanas in his second year. Two other sets, found at *Chikkasarangi,* District Tumkur, belong to the Ganga king Sripurusha, issued respectively in his fifth and twentysecond year. Another copper-plate set, from the same place, records two endowments made by the subordinates of the Rashtrakuta ruler Govinda HI. Among the stone inscriptions, the following are noteworthy. A hero-stone, containing a panel depicting a hero defending buffaloes, mentions one Siyavallavarasa, probably a subordinate of the Ganga ruler Sripurusha. A slab built into the Dorasamudra tank-bund at *Halebid,* District Hasan, records the erection of a Mallikarjuna temple (no longer extant) during the rule of the Hoysala king Vira Ballala II, by two of his officers, Mahadevanna and Buchiaboppisetti. Three other records, from *Sravanabelgola, Huliyar* and *Nittur,* are important inasmuch as they help in the determination of the date of the monuments near which they were set up.

The Director of Archaeology and Museums, Rajasthan State, noticed the following inscriptions. An inscription of the Vikrama year 1356 in the Rata Mahavira temple at *Hathundi* near Bijapur in Jodhpur Division records the award of a few *Visalapriya-drammas* to the temple. An inscription on a *chhatri* outside the village *Khamnor* near Udaipur is dated in the Vikrama year 1851 and refers to the erection of the *chhatri*

by Maharana Karnasingh of Udaipur, in honour of Salivahana, son of Raja Ram Shah of Gwalior, who died in the famous battle of Haldighat.

The Superintendent, Department of Archaeology, Saurashtra State, reports the discovery of a copper-plate grant, from a mound at *Mandav* near Dhasa, District Gohilwad, belonging to the Maitraka king Siladitya IV and mentioning certain Trivedins and Chaturvedins as the recipients of a gift made in the Valabhi year 387.

## B. ARABIC AND PERSIAN INSCRIPTIONS

The Assistant Superintendent for Arabic and Persian Epigraphy examined nearly two hundred inscriptions, the more important of which are noted below.

INSCRIPTION OF RUKNU'D DIN KAIKA'US, MAHESWARA, DISTRICT MONGHYR.—The earliest inscription examined this year, it records the construction, in A.H. 692 (A.D. 1293) of a 'strong fort' by Ikhtiyaru'd Din Khan-i-Khanan, Abu'l Ma'ali Firuz Aitigin Sultani during the time of Kaika'us, the grandson of Balban, whose rule has been overlooked by the Delhi chronicles. The present inscription confirms the numismatic evidence which places the rule of the king between A.H. 691 (A.D. 1291) and A.H. 702 (A.D. 1302).

FOUR INSCRIPTIONS OF 'ALAU'D DIN KHALJI, CHITTORGARH.—All of them are fragmentary. The first, recovered from the wall of a private house, is dated A.H. 704 (A.D. 1304) and mentions Mamriz Alpkhani. The second, of A.H. 709 (A.D. 1310), contains an eulogy of the Sultan; the third gives merely a part of his name and titles; and the fourth records the construction of a Jami' mosque, of which no trace now remains.

FIVE INSCRIPTIONS OF THE TUGHLUQS.—The first of them, belonging to the reign of Muhammad bin Tughluq's first regnal year, comes from *Chittorgarh* and records the construction of a *sarai*. It gives the governor's name as Malik Asadu'd Din Arsalan, a cousin of the Sultan, while Chittor is referred to by the name Khizrabad given to it by 'Alau'd Din Khalji. It thus shows the continuous sway of the Delhi Sultans over Chittor after the Khalji conquest. The second record, of the same monarch, is found engraved on a stone till recently lying in a temple at *Bediban*, District Champaran. Dated A.H. 747 (A.D. 1346), it was wrongly ascribed by Cunningham to Mahmud Sharqi of Jaunpur. It provides a valuable evidence of the Tughluq sway in Tirhut. The third inscription, from *Mandor*, near Jodhpur, mentions the construction of a mosque and is dated in the reign of Firuz Shah Tughluq. The fourth, a bilingual one, originally from Sambhar, District Jaipur, but now in the Archaeological Museum, Amber, mentions the construction, during Firuz Shah's reign, of a step-well, through the efforts of Bamdev, who is mentioned as *Muti`u'l Islam,* 'submissive to Islam'. The inscription also refers to the production, at Sambhar, of salt, a certain portion of which was allotted for the maintenance of the well. The fifth inscription comes from *Bihar Sharif,* District Patna, and by its mention of Mahmud Shah, the last of his line, shows that Bihar had continued to acknowledge the sovereignty of this ruler even when his authority at Delhi was on the decline.

INSCRIPTION OF SIKANDAR LODI, BIHAR SHARIF, DISTRICT PATNA.—This inscription, the only one of Sikandar Lodi found in Bihar so far, refers to his conquest of that province and mentions the construction of a gateway to a certain building by Haji Khan, during the governorship of Darya Khan Nuhani.

THREE EARLY MUGHUL INSCRIPTIONS.—The inscription, from *Hindaun*, District Sawai Madhopur, a hitherto-unnoticed record of Babur's reign, forms an epitaph on the grave of a lady of the Qazi family of Mahaban, whose husband, Qazi Burhanu'd Din, was the governor of Hindaun. An inscription of Akbar from *Bayana*, District Bharatpur, is a new record of that monarch's journey through Bayana in A.H. 1010 (A.D. 1601-02) after his conquest of Khandesh. It was engraved by the celebrated noble, *litterateur* and calligraphist of the court, Mir Muhammad Ma'sum Nami. The third record, from *Patna*, dated A.H. 1036 (A.D. 1626-27), mentions prince Parwiz, son of Jahangir, with titles of a ruling sovereign and records the construction of a mosque out of the remains of a fort at Majhauli etc., demolished by Nazar Khan Khwishgi.

INSCRIPTION OF SHER SHAH, AMTHUA, DISTRICT PATNA.—The record belongs to the pre-kingship period of the career of Sher Shah who is mentioned herein as Sher Khan. Another notable point of the inscription is that it records the date both in the Hijra and Shuhur eras, the latter of which was in vogue in the Deccan.

FIVE INSCRIPTIONS OF THE SULTANS OF BENGAL.—The first of these, found at *Bhagalpur*, records the construction of a bridge by Nasiru'd Din Mahmud I of Bengal. The second, discovered at *Champanagar*, a suburb of Bhagalpur, is a new inscription of Muzaffar Shah, dated A.H. 897 (A.D. 1491), mentioning the construction of a mosque by Mu'tabar Khan, an official of the king. The remaining three epigraphs pertain to the reign of 'Alau'd Din Husain Shah and were found respectively at *Bhagalpur*, *Patna* and *Barh*, District Patna.. They show the western extent of the Bengal kingdom; however, the Patna inscription, dated A.H. 916 (A.D. 1510-11), is a little intriguing inasmuch as a greater portion of Bihar had been under the possession of the Lodis since the conquest of Bihar by Sikandar Shah. An explanation may be that the inscription is not *in situ*.

INSCRIPTION OF IBRAHIM SHARQI, BIHAR SHARIF, DISTRICT PATNA.—Dated in A.H. 807 (A.D. 1404-05), in the reign of Ibrahim Sharqi of Jaunpur, it refers to the renovation of a structure by Qutb Ahmad *'Ariz*.

INSCRIPTION OF YUSUF KHAN AUHADI, HINDAUN, DISTRICT SAWAI MADHOPUR.—This important record, mentioning the erection of a mosque in A.H. 842 (A.D. 1439), provides a valuable link in the genealogy of the Auhadis of Bayana. Cunningham, basing his table of genealogy mainly on the *Tarikh-i-Mubarak Shahi*, makes Yusuf Khan a son of Auhad Khan: this must be wrong, as the present inscription mentions him as the son of Mubarak Khan. Also, the record extends Yusuf Khan's rule over Hindaun by five years, the last date mentioned in the chronicles being A.H. 837 (A.D. 1433-34).

The Director of Archaeology and Museums, Rajasthan State, noticed a blurred inscription of Akbar, engraved on a huge stone-slab in a ruined temple at Lodrava, Jaisalmer.

# 4. PRESERVATION OF MONUMENTS

## A. MONUMENTS OF NATIONAL IMPORTANCE

### NORTH-WESTERN CIRCLE

*Delhi*

PURANA QILA, NEW DELHI.—The floor of *Sher Shah's mosque* was dismantled and renewed with lime-cement concrete matching with the original work.

TOMB OF SAFDARJANG, NEW DELHI.—The dead concrete on the roof of the eastern *gateway* was replaced with lime-cement concrete.

CHAUSATH KHAMBA, NIZAMUDDIN, NEW DELHI.—AS the enclosure-walls of the white-marble mausoleum stood in need of underpinning, the decayed patches were chiselled off and the voids restored in rubble masonry. Most of the open joints in the masonry of the walls were pointed.

TOMB OF ABDUR RAHIM KHAN-I-KHANAN, NEW DELHI.—The precincts were cleared of rubbish and debris, and the area was turfed and wire-fenced. *Red-morum* pathways were provided inside the enclosure. Cracks and hollows in the walls and domes were grouted and rendered watertight.

MOSQUE OF ISA KHAN, NEW DELHI.-Lime-cement concrete was re-laid on the floor after the removal of the decayed concrete.

TOMB OF HUMAYUN, NEW DELHI.-The floor of the platform round the mausoleum, which had decayed and presented a pitted surface, was redone in lime-cement concrete. The fallen portions of the retaining walls of the niches and graves, both inside and outside, were rebuilt according to the original design. The paths in the gardens were dressed up.

PILLAR OF ASOKA, RIDGE, DELHI.- The monument was protected by a wirefencing with a turnstile and the area tidied up.

KOTLA FIRUZ SHAH, DELHI.- The brick tenements on the lawns of the citadel, built a few years back for the occupation of the refugees, were dismantled and the lawns restored to their original condition. The gaps and other missing portions in the massive walls were filled with rubble masonry and the open joints with concreted mortar.

JAMI` MASJID, DELHI.- Though this magnificent monument is not `protected', the Government of India, in recognition of its importance, appointed, in 1953, a committee to examine it and recommend measures for its preservation. The committee found the monument to be in a sound condition but, at the same time, felt that the following repairs were necessary: (i) replacing the defective red sandstones with joints grouted; (ii) replacing and polishing the marble-stones wherever necessary;

(iii) grouting joints with hydraulic mortar; (iv) washing the soffits of the dome; and (v) replacing the iron dowels with those of stainless steel. It was decided that the work should be started initially with the funds placed a few years back at the disposal of Delhi State by H.E.H. the Nizam of Hyderabad and that it should be executed by the Department of Archaeology. Accordingly, work was started here in February 1956. The plinth-stones in the eastern half of the southern wing were taken up first for replacement, as they had left the grip of the salt-affected masonry. The veneer-stones, 4 to 8 in. thick, were reset in mortar with copper cramps, secured in position by lead joints where necessary, for fastening them with the core. The southern gate, where most of the stones had been badly damaged by moisture, also received attention. Some of the worst-affected stones were renewed, and others are now being renewed. Before the laying of new veneer-stones, all decayed masonry and brickwork at the back were cut, joints cleaned, cracks grouted and cavities filled.

HAUZ KHAS, MEHRAULI.—The decayed floors of some of the southern cells were re-laid in lime-concrete. The walls were underpinned and loose joints pointed with lime-cement.

QUTB, MEHRAULI.—A wide crack in the dome of *`Alai Gate* was grouted with cement and the adjacent joints made watertight.

TOMB OF GHIYASU'D DIN TUGHLUQ, TUGHLAKABAD.—The leaky roof over a few cells in the northern enclosure-wall around the mausoleum was repaired and some broken red sandstones replaced.

' ADILABAD MONUMENTS AND CAUSEWAY, TUGHLAKABAD.—The decayed and fallen portions of the old walls were rebuilt in lime-cement mortar.

## *Panjab*

MONUMENTS IN KANGRA DISTRICT.—Besides ordinary annual repairs to the monuments, stone flagging was provided around the *Siva temple,* Dassal.

## *Ajmer*

ANASAGAR BARADARI, AJMER.—A portion of the floor of the platform at the marble pavilion was re-laid in lime-cement concrete and the paths and drives dressed up.

BADSHAHI MAHAL, PUSHKAR.—The dislodged stones in the monument were reset, rubble-walls repaired and cracks in the walls grouted.

## *Uttar Pradesh*

EXCAVATED REMAINS NEAR KALSI, DISTRICT DEHRA DUN.—The bricks in the third *asvamedha-site* were consolidated on the ground in cement and yellow sand in exactly the same position as they had been found. Wire-fencing around all the sites was taken in hand.

TOMB OF SHAHPIR, MEERUT.—Decayed patches in the brickwork were filled and rebuilt with country-bricks matching the adjacent surface. Open joints were treated with cementing material and the surface made watertight.

## NORTHERN CIRCLE

### *Uttar Pradesh*

TAJ MAHAL, AGRA.—The work of consolidating the- facades of the mausoleum was continued. Besides the pointing of the marble facing, the resetting of loose inlay-pieces and the insertion of new ones, the floors of the upper *sahanchis* were re-laid with cement-concrete to prevent the percolation of rain-water into the core of the structure. The marble screen around the cenotaphs and the carved marble dados in the interior and exterior were cleaned. In the plinth of the marble platform containing the tank, two rows of the pavement at the back of the dasa-stones were dismantled, the crevices noticed below them grouted and the slabs reset. To make the platform further watertight pointing was done all over. The twentytwo marble cupolas over the main gate were repaired by the resetting of the dislodged veneer-stones after the crevices below them had been thoroughly grouted.

FORT, AGRA.—At *Salimgarh* the exfoliated carved panels of the parapet on the east and west sides were replaced with new ones carved after the original pattern, and a large number of bulged stones were reset. Two exquisitely-moulded stones of the *dasa* and the niches were substituted by similar new ones.

IDGAH, AGRA.—The roofs of the central and southern compartments having decayed, they had been propped up with masonry pillars. This year, the rebuilding of the roof of the central compartment was taken in hand. The work is in progress. The floor of the northern compartment was renewed.

GROUP OF MONUMENTS, FATEHPUR SIKRI, AGRA.—A few richly-ornamented *chhajja*-stones of *Turkish Sultana's house,* which had fallen down due to the rusting of the iron clamps, were replaced by similarly-carved stones (pl. XLV). The inner face of the *city-wall* to the north of Agra gate was rebuilt in sections in continuation of the previous years' work. The decayed stone flags in *Stone-cutter's Masjid, Buland Darwaza, Maryam's house* and *Hiran Minar* were replaced.

JUGAL KISHOR TEMPLE, BRINDAVAN, DISTRICT MATHURA.—The lofty *sikhara* of the temple, covered with vegetation, was cleared and the wide joints filled with lime-cement mortar. Grouting was also done at places and the top of the *sikhara* made watertight.

EXCAVATED REMAINS AT KAUSAMBI, DISTRICT ALLAHABAD.—The remains at *Ghoshitarama* continued to receive attention: the topmost courses of the walls were dismantled, reset in cement-mortar and covered with sifted earth.

GROUP OF MONUMENTS, KHUSROBAGH, ALLAHABAD.—TO prevent dust from accumulating on the paintings, now being chemically treated (below, p. 54), all the windows and jail-windlets were provided with glass-panes. Loose painted plaster was delicately grouted and edged. The rooms and godowns in the first and second floors in the southern gateway were repaired, floored with lime-cement concrete and provided with doors of Mughul pattern.

EXCAVATED REMAINS, SRAVASTI, DISTRICTS GONDA-BAHRAICH.—The Buddhist remains at *Jetavana* (Saheth) received special attention: extensive jungle-clearance, removal of dump and debris, levelling up of all undulations, filling up of excavated pits, underpinning of walls with bricks of ancient sizes, making of wall-tops watertight, and provision of major and minor inspection-paths and historical notices constituted the important items of work. Lawns and a judicious plantation of shrubs are under way to beautify the site.

ANCIENT SITE, SANKISA, DISTRICT FARRUKHABAD.—Work at the site mainly centred round the *Bisari Devi mound* (representing an ancient *stupa)* and the *elephant-capital of Asoka* near it. A stone apron was provided around the shed over the capital. The whole area was levelled and dressed; a path leading from the main road to the site of the capital and circumambulating the *stupa-mound* is under construction.

### *Rajasthan*

PALACES, DEEG, DISTRICT BHARATPUR.—A few dislodged stones in the causeways and channels were reset. The iron rings in the stone facing continued to be extracted.

### *Vindhya Pradesh*

GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—The important items of repairs to the temples consisted of the cement-grouting of the cores and the replacement of worn-out stones in the facades of the *Kandariya Mahadeva* and *Visvanatha temples.*

## MID-EASTERN CIRCLE

### *Bihar*

EXCAVATED REMAINS, NALANDA, DISTRICT PATNA.—Lime-concrete roads were provided at the important monuments. A general programme of the removal of heaps of debris and spoil-earth, demolition of a conspicuous hut at the centre of the site, turfing of prominent areas and levelling and dressing was undertaken and has resulted in making the site all the more attractive. The sunken brick floors at *Sites 8, 9 and 11* were re-laid. In the course of clearance a medieval Jaina image was recovered.

MONUMENTS AND REMAINS, RAJGIR, DISTRICT PATNA.—Wire-fencing was provided round *Jivakamravana, Ajatasatru stupa* and *Sonbhandar caves.* The premises of *Maniyar Math* and *Sonbhandar caves* were cleared, resulting in the discovery of stone structures at the latter place. The northern wall of the *New Fort* was exposed and conserved.

EXCAVATED REMAINS, KUMRAHAR, PATNA.—The improvements included the provision of an approach-road, levelling and dressing and filling up of a large pond to the north of the site.

### *Uttar Pradesh*

EXCAVATED REMAINS, SARNATH, DISTRICT BANARAS.—The excavated structures were extensively underpinned and made watertight. The surface was properly levelled for the easy flow of rain-water; old drains were repaired and new ones provided. A brick compound-wall with an entrance-gate was erected in the front portion of the site facing the road. All available space was turfed and planted with stray trees in harmony with the surrounding, the existing trees were trimmed, and a hedge was planted along the eastern and northern boundaries of the site. Pipe-lines connected with a tube-well outside the area were laid for irrigation. Approach-roads and pathways were provided all over the site (pl. XLVI). A few stone carvings, besides medieval pottery and other minor antiquities, were unearthed during clearance.

EXCAVATED REMAINS, KUSINAGARA, DISTRICT DEORIA.—Work of the same nature as at Sarnath was undertaken at the site of the Buddhist establishment known as *Matha-Kuar-ka-Kot.* The unsightly structure over the colossal statue of Dying Buddha, erected by Carlleyle in the eighties of the last century, is being replaced by a new structure of elegant design by the Central Public Works Department. A number of inscribed seals, similar to those found in the past, and a few terracotta images, noteworthy among them being an image of Buddha found in front of the Nirvana temple, were discovered. Extensive clearance was effected at the famous *Ramabhar Stupa* near Kusinagara and the base of its drum exposed on all the four sides. The thick jungle of huge trees growing on the monument was entirely removed with the exception of a single banyan-tree at the top (pl. XLVII).

## EASTERN CIRCLE

### *West Bengal*

CHARBANGLA GROUP OF TEMPLES, BARANAGAR, DISTRICT MURSHIDABAD.—The group of four Siva temples, important specimens of the terracotta art of Bengal, received attention. The leaky terraces of the *eastern and southern temples* were re-laid in concrete and that of the *northern temple* repaired. A part of the missing decorated cornice was restored without any reproduction of the original ornamental details.

MOSQUE OF MURSHID QULI KHAN, KATRA, MURSHIDABAD.—The dangerously-overhanging walls of two of the cells surrounding the mosque were secured by underpinning.

RASA-MANCHA, VISHNUPUR, DISTRICT BANKURA.—The entire surface of the high plinth of this imposing edifice was cleared of vegetation, grouted and pointed. The decayed concrete of the gabled roofs of six of the existing cupolas was renewed with toned lime-concrete.

### *Assam*

SIBDOL TEMPLE, SIBSAGAR.—In continuation of the previous years' work, the bulged-out and overhanging stones of the superstructure were dismantled on the northern, north-western and part of the north-eastern sides and replaced by new stones

from the Kohima quarry matching the original. Proper bond was provided with the firm core behind by means of copper cramps and pins embedded in cement-concrete. In order to render the *sikhara* watertight, its brickwork was repaired and replastered after the removal of the decayed plaster.

### *Orissa*

SUN TEMPLE, KONARAK, DISTRICT PURL—In pursuance of the recommendations of the Konarak Temple Committee, which met in 1953, work is progressing at the monument. Attention was concentrated on the removal of sand from its precincts, and the eastern, southern and southern-western corners were cleared of sand and blocks of stone of various sizes lying all over. Consequent on sand-clearance, the lower part of a small but elegant Vaishnavite brick temple was brought to light in the south-western corner of the compound (pl. XLVIII A): of the three *parsvadevatas* in the exterior niches, two, viz. Varaha and Vamana (pl. XLVIII B and C), were still *in situ*. Further attention was paid to the rectification of the slope in the second and third terraces *of the jagamohana* for the easy flow of rain-water. A few missing moulded stones of the northern staircase were replaced by new ones, and grouting with cement-mortar mixed with ironite was done where necessary. As a result of experiment it was decided that ironite as the waterproofing medium should be evenly distributed in the entire thickness of the concrete to be used as terracing-material in the proportion of 1 lime, *I* cement, 2 sand, 4 stone chips and 7.6 lbs. of ironite by weight. With a view to determining the depth to which sand-clearance was to be undertaken and, incidentally, to ascertaining the stratigraphy of the site, a trench was laid joining the Mayadevi temple with the south-west corner of the main temple. It was also decided that the colossal Navagraha-slab, under worship, should be removed from the sculpture-shed and placed outside the compound: the new shed to house it is under construction.

RAMESVARA TEMPLE, BHUVANESWAR, DISTRICT PURL—The loose and disjointed stones in the plinth around the temple were reset in cement-mortar and the open joints grouted and pointed.

PARASURAMESVARA TEMPLE, BHUVANESWAR, DISTRICT PURL—A stone apron was constructed around the eastern half of the temple at plinth-level to stop the percolation of rain-water and thus to ensure the stability of the structure.

ROCK-CUT CAVES, KHANDAGIRI AND UDAIGIRI, DISTRICT PURL—Heavy jungle obstructing the view of the caves from the roadside was cleared, stone benches and flights of steps provided at suitable places and historical and direction notice-boards set up at necessary points. The retaining wall in front of *Barabhuji cave* was repaired and a parapet-wall added to it.

## SOUTH-EASTERN CIRCLE

### *Andhra*

KALYANA VENKATESVARA TEMPLE, MANGAPURAM, DISTRICT CHITTOOR.—The compound-wall enclosing the temple was repaired and debris and vegetation from .the compound removed.

SOMANATHA TEMPLE, MELAPADI, DISTRICT CHITTOOR.—The decayed and moth-eaten wooden rafters supporting the ceiling was conserved.

FORT AND MAHAL, GURRAMKONDA, DISTRICT CHITTOOR.—Besides the clearance of rank vegetation and removal of scattered stones, the wide gap in a wall was filled with concrete and lime-plaster applied in patches on the flooring and walls.

FORT AND MAHALS, CHANDRAGIRI, DISTRICT CHITTOOR.—The repairs to the monuments included the reconstruction of collapsed revetments, clearance of vegetation from the fort-walls and removal of moss from the tank.

HILL-FORT, RAYADURG, DISTRICT ANANTAPUR.—The scattered and fallen stones were removed from the approaches and the monument proper. The area all round the monument was cleared and the jungle on the *fort-wall* removed.

MALLIKARJUNA TEMPLE, KAMBADOOR, DISTRICT ANANTAPUR.—The compound-wall constructed without foundation was in a decayed condition : parts of its exterior casing-masonry had crumbled, and other parts were out of plumb. The entire affected length of the wall was dismantled and reconstructed. Leakages in the *garbha-griha, gudha-mandapa* and *sabha-mandapa* were stopped by filling the cracks with combination-mortar.

HILL-FORT, GANDIKOTA, DISTRICT CUDDAPAH.—The decayed plaster in the *dalans* all round the mosque was thoroughly raked out to a varying height of 4 to 5 ft. and a new layer applied.

FORT, SIDDHAVATTAM, DISTRICT CUDDAPAH.—The top of the rampart-wall was made watertight at places where it had got dislodged. The wide cracks in the facing-masonry were filled with mortar.

FOUR-STOREYED ROCK-CUT CAVES, UNDAVALLI, DISTRICT GUNTUR.—The top-terrace was reconcreted to stop water-leakage and rain-water diverted to an adjoining fall to avoid dripping on the face of the caves.

KONDAREDDI BURJ, KURNOOL.—The important items of repairs included the restoration of the broken flanking walls of the steps with rubble-masonry; reconstruction of the damaged corner; and the re-laying of Cuddapah stones on the terrace and floors of the niches. In the course of clearance of one of the niches steps leading down to an unexplored tunnel were discovered.

## *Madhya Pradesh*

FORT-WALLS, CHANDA.—Thick jungle was cleared from the entire length of the fort-wall (about 5½ miles).

GROUP OF TEMPLES, MARKANDA, DISTRICT CHANDA.—The stone-and-brick debris was removed from the compound and the temples made easily accessible.

FORT, BALLARPUR, DISTRICT CHANDA.—The collapsed fort-wall, to a length of about 50 ft., was repaired by the grouting of the rubble-core and filling of the top-parts with rubble set in mortar.

MAHADEVA TEMPLE, NERI, DISTRICT CHANDA.—The slopes of the sides of the tank were revetted with grouted stone pitching to prevent erosion of earth,

MAHADEVA TEMPLE, WARHA, DISTRICT CHANDA.—Small trees growing over the *sikhara* of the temple were eradicated. The cracks in the *sikhara* and walls were filled and rendered watertight.

TEMPLE, ADBHAR, DISTRICT BILASPUR.—Encroachments were removed and wire-fencing provided around the temple. The area was also levelled.

### *Hyderabad*

FORT, GOLCONDA, DISTRICT HYDERABAD.—Extensive debris-clearance was undertaken inside the *jhulas, Nagina Bagh, Akkanna Madonna halls* and *Rani Mahals* and their floors levelled and protected with dry retaining walls at the ends. Large-scale removal of vegetation around the structures and from the tops of walls was also effected. In *Dad Mahal* the masonry was underpinned at places and consolidated as a whole. The tops of the *Akkanna Madonna halls* and the roofs of *Silai Khana* were rendered watertight. Some of the roads cut by rain-water were gravelled. The original drain was cleared of choking material to a length of about 100 ft. and the culverts repaired after resetting the covering slabs.

CHAR MINAR, HYDERABAD.—The damaged plaster of the top-terrace was raked out and replaced by a fresh layer. The blocked-up drainage-spouts were repaired and made to function.

THOUSAND-PILLARED HALL, HANAMAKONDA, DISTRICT WARANGAL.—The dislodged flag-stones in the platform of the *mandapa* were reset and the joints pointed with lime-mortar.

FORT, WARANGAL.—The" disturbed floor-slabs in *Khush Mahal* were reset and open joints pointed. The retaining walls of the bastion on the south side of the *second western gate* were reconstructed, and the flanking walls were underpinned and consolidated where the masonry had bulged out or become hollow. Temporary masonry supports were provided to prop up the dislodged lintels of *Ekasila temple* and *Venkatesvaragudi.*

## SOUTHERN CIRCLE

### *Madras*

FORT, VELLORE, DISTRICT NORTH ARCOT.-The inspection-paths on the surrounding *rampart* were consolidated with gravel. The gullies formed by rain-*water* around and on the edge of the *moat* and *fort-walls* were filled, and the dilapidated apron in the in *north-west corner* was reset.

JALAKANTESVARA TEMPLE, VELLORE, DISTRICT NORTH ARCOT.-The doors of the main temple were painted with wood-preservative. The narrow pathways were widened and gravelled and the floor of the *Amman-sannidhi* re-laid with granite-slabs.

JAINA TEMPLE, TIRUMALAI, DISTRICT NORTH ARCOT.-The high and uneven heaps, giving an unsightly appearance to the monument, were removed. The terrace of the temple was made watertight and its floor repaired.

GROUP OF MONUMENTS, MAHABALIPURAM, DISTRICT CHINGLEPUT.—The approaches to the monuments were gravelled.

KAILASANATHASVAMI TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The high compound-walls on the south-west, west and north-west sides of the temple, where water stagnated, were made watertight by the laying of properly-sloped granite slabs and pointing with tinted lime-mortar.

IRAVATANESVARA TEMPLE, KANCHIPURAM, DISTRICT CHINGLEPUT.—The accumulated debris all round the temple was cleared, the ground properly sloped to drain away rain-water and the entire area gravelled. The roofs of the *mandapa* and subsidiary shrines were made watertight.

GROUP OF MONUMENTS, GINGEE, DISTRICT SOUTH ARCOT.—Besides ordinary repairs such as pointing, plastering, removal of obstructive boulders, etc., the narrow culverts were widened. The large-sized stones of the steps of the *Chettikulam pond,* dislodged by floods, were carefully removed and reset (pl. XLIX). The roof of the *dalans* of the *kalyana-mandapa* in the *lower fort* was made watertight and cracks in the walls grouted.

FORT, ATTUR, DISTRICT SALEM.—An inspection-path was provided all round the *rampart-wall.* The floors of the *Durbar hall* and a part of *Kalyana-mahal* were repaired in concrete.

FORT AND TEMPLE, CHINNAKAVUNDANUR, DISTRICT SALEM.—Besides minor works, an apron of granite slabs was provided on the western side of *Sri Varadarajasvami temple* to prevent accumulation of water. A heap of debris, obstructing the view, was removed and a revetment constructed to prevent erosion. The displaced floor-slabs inside the *Varadarajaperumal temple* were reset.

SIVA TEMPLE, VALIKANTAPURAM, DISTRICT TIRUCHIRAPPALLI.—The leaky portions of the terrace were attended to, and the uneven granite floor in the *prakara* was re-laid.

FORT, RANJANGUDI, DISTRICT TIRUCHIRAPPALLI.—The fallen portion of the *northern bastion* at the top of the citadel was rebuilt on the old design and its top finished with a layer of concrete.

ROCK-CUT PALLAVA CAVES, TIRUCHIRAPPALLI.—The uneven floor of the *upper cave* was levelled with a layer of concrete. The iron gate at the entrance of the *lower cave* was provided with expanded metal.

BRIHADISVARA TEMPLE, GANGAIKONDACHOLAPURAM, DISTRICT TIRUCHIRAPPALLI.—The fallen stones of the *gopuram* were collected and stacked outside the temple. The work is in progress.

KADAMBAR TEMPLE, NARTHAMALAI (PUDUKKOTTAI), DISTRICT TIRUCHIRAPPALLI.—The dilapidated *mandapa* was cleared of all fallen material and the granite lintel re-laid in position. The ceiling-slabs were made watertight with a layer of concrete topped by two courses of flat tiles and finished in conformity with the old construction.

ROCK-CUT SIVA TEMPLE, KUNNANDARKOIL (PUDUKKOTTAI), DISTRICT TIRUCHIRAPPALLI.—The disturbed granite steps leading to the terrace and the floor in *Nataraja-mandapa* were reset to a uniform level and pointed with lime-mortar.

ROCK-CUT CAVES, SITTANNAVASAL (PUDUKKOTTAI), DISTRICT TIRUCHIRAPPALLI.—Steps were constructed in random rubble in mortar for an easy access to the caves.

GROUP OF MONUMENTS, KUDUMIYAMALAI (PUDUKKOTTAI), DISTRICT TIRUCHIRAPPALLI.—The disturbed brick-course on the terrace of the *Amman shrine* was re-

laid to a proper slope; teak-wood temple-doors were provided; and the uneven granite floor of the main temple was reset.

SIVA TEMPLE, TODAYUR (PUDUKKOTTAI), DISTRICT TIRUCHIRAPPALLI.- The buried basement of the temple was exposed, the cracked capital of one of the pillars was secured by iron band and the uneven granite floor was set right.

BRIHADISVARA TEMPLE, TANJORE.-A strip of earth, 30 ft. wide at the top, 18ft. wide at the bottom and 8 to 9 ft. deep, was removed around the compound-wall of the temple, built in two storeys, with a view to exposing the lower storey bearing inscriptions and the original Chola level (pls. L and LI). In the operation an image of the saint Karurar, 1 ft. 7 in. high, and two small copper coins of Rajaraja were found, besides cannon-shots and ceramic pieces of the East India Company period in the upper levels. The work is in progress. Framed wire-mesh was provided in the opening of the second *gopuram*.

SIVAGANGA LITTLE FORT, TANJORE.—The decayed plaster on the *arched gateways* was renewed in suitably-coloured lime-mortar.

RAMAPADAMANDAPAM, KODIAKKODU, DISTRICT TANJORE.—The four carved granite pillars supporting the vaulted dome of the monument having collapsed in a cyclone in December 1955, bringing down the vault as well, the dome was rebuilt on four new pillars carved after the original ones and the Ramapadam refixed in brick platform.

VALISVARAR TEMPLE, TIRUVALISVARAM, DISTRICT TIRUNVELI—A retaining wall was built to arrest the erosion of the compound-wall by the adjoining stream.

ROCK-CUT CAVE AND INSCRIPTIONS, TIRUPPARANKUNRAM, DISTRICT MADURAI.-The pathways were gravelled, stone benches provided and platforms constructed around the trees near the entrance.

FORT ST. ANGELO, CANNANORE, DISTRICT MALABAR.—-Of the numerous magazines and barracks in the fort, situated on a promontory, two barracks were taken up for repairs. To prevent their misuse their inner openings leading to the cells of the bastions were provided with doors.

GOMMATESVARA STATUE, KARKAL, SOUTH KANARA.—The fallen portion of the compound-wall was rebuilt and the doors painted.

CHATURMUKHA TEMPLE, KARKAL, SOUTH KANARA.—Leaks in the roof were arrested by the removal of the granite hood-stones, packing of the edges of the channel-stones cement-mortar and replacement of the ridge-stones after packing their edges with the channel-stones. The missing tiles in the front *mandapa* were replaced.

ANANTAPADMANABHA TEMPLE, KARKAL, SOUTH KANARA.—The joints between the slabs of the granite roof were grouted, the door of the *garbha-griha* provided with new cups and sockets for its proper functioning and preservative applied to all woodwork.

## *Coorg*

FORT, MERCARA.—The plaster on the walls and the roofs of some of the rooms were attended to and the tusk of the smaller masonry elephant refixed.

RAJA'S SEAT, MERCARA.—The entire roof was dismantled and re-tiled, using the old tiles as far as possible. The keystone of the arches and the adjacent

masonry were repaired. In the course of the work was found an emblem of Viraraja engraved with the letter v in Kanarese.

THREE JAINA TEMPLES, MULLUR, MERCARA.—The roofs were made watertight and two cracked beams in one of the temples replaced.

### *Travancore-Cochin*

UMBRELLA-STONES, KANDANASERI, DISTRICT TRICHUR.—TWO sites were provided with wire-fencing, and one of them, lying on a slopy terrain, was levelled up.

PALACE-WALLS, MATTANCHERI, DISTRICT COCHIN.—The protected portions of the palace were suitably screened and demarcated and suitable preservative applied on the wooden top of the building.

FORT, ANJENGO, DISTRICT TRIVANDRUM.—Extensive replastering and replacing the decayed plaster were undertaken.

### *Mysore*

TIPU SULTAN'S PALACE, BANGALORE.—The old spongy plaster and tiles were removed from the terrace and the leaky roof made watertight by laying two courses of flat tiles in cement-mortar mixed with 10 per cent diesel oil and plastering with well-ground lime-mortar. All woodwork was painted to prevent dry rot.

VIDYASANKARA TEMPLE, SRINGERI, DISTRICT CHICKMAGALUR.—The roof over the circumambulatory passage of this granite structure is in two layers: the bottom one is at a height of 11 ft., and 2 ft. 9 in. over it is the smaller false roof with channel-slabs covered with ridge-stones, placed invertedly at the junctions of the channel-stones. The foundation on the northern side of the passage had sunk, resulting in the fracture of eleven out of the twelve channel-slabs. They were replaced with new ones carved after the old ornamental design, and the old ridge-stones re-laid with the joints pointed.

VIDYARANYA TEMPLE, BELAVADI, DISTRICT CHICKMAGALUR.—The front *dalan* has been out of plumb, with one of the beams on the southern side cracked. Its walls and pillars were reset to plumb, the beam replaced, the side-walls suitably stepped and the top made watertight. The modern accretions were removed. The loose sculptures were collected and stacked in the *upparigai.* The leaky roof of the temple is being attended to.

SRIKANTESVARA TEMPLE, NANJANGUD, DISTRICT MYSORE.—The decayed concrete of the terrace was replaced, and lime-plaster was removed from over sixtyfive pillars.

RAMESVARA TEMPLE, NARASAMGALA, DISTRICT MYSORE.—The uneven ground round the *Sapta-matrika shrine* was levelled and a broken door repaired.

GROUP OF MONUMENTS, SRIRANGAPATNA, DISTRICT MANDYA.—The work generally consisted of the removal of old plaster, dead mortar, concrete tiles, etc., and the rendering of the terrace watertight with two courses of flat tiles over a bed of brick concrete in pure lime.

DARYA DAULAT, SRIRANGAPATNA, DISTRICT MANDYA.—Three screens were provided at the verandah to protect the paintings. The woodwork was painted, buildings colour-washed and approach-roads gravelled.

PANCHAKUTA BASTI, KADAMBAHALLI, DISTRICT MANDYA.—An obtrusive brick wall, a later accretion, was removed and the floor paved with stone-slabs over a bed of lime-concrete. The decayed terrace of *Santinatha Basti* was replaced by two layers of bricks in cement-mortar mixed with crude oil over a bed of 4 in. thick lime-concrete. The cracks in the walls were grouted and the joints in the ceiling pointed. A retaining wall was erected and the stone platform reset.

## SOUTH-WESTERN CIRCLE

### *Hyderabad*

ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—In *Cave 1*, leakage from the roof affecting the paintings, a long-standing problem, was effectively stopped by the provision of a ceiling-drain designed to drain away all the water outside the cave. This was effected by the scooping out of the weathered rock along the entire length of the ceiling of the back corridor of the cave and the insertion of an asbestos drain suitably anchored by means of steel bars and concealed below by concrete matching the rock-surface (pl. LII). The work was executed by the State Public Works Department. Leakage from the roof in the verandah of *Cave 16* was counteracted by grouting the crack from top and sealing it from below. The weathered jambs and pillars in *Cave 6* were plastered to stop further disintegration, and the pits and holes in the floors of several caves were filled.

ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.- Most of the damage to the group of Buddhist caves was caused by water that flowed down over the front of the caves from the hill behind. A new drain was excavated to divert rain-water from falling over the sculptured face a Cave10. The surface-drains at the hill-top were extended, so that water flowing over Cave 16 could flow elsewhere. Leakage of water in that cave was stopped by laying concrete on the roof, and water accumulating thereon was suitably diverted. Expanded-metal doors were fitted to Caves 7, 11 and 33. Repairs to the decayed pillars in Caves 3 and 26 were effected by the suitable insertion of flat iron bands to hold the fractured pieces together. The pits and holes in the floors of Caves 3, 4, 5 and 12 were filled. The distintegrated door-jambs and corner pillars in Cave 5 were plastered to prevent further decay. The longitudinal cracks along the side-walls of Cave 12 were filled with concrete. The pathways were imporoved. Also noteworthy are the repairs to the cracked and decaying sculptures: the Kalyana-sundara-panel, the Ganga-figure (pl.LIII) and the panel depicting Ravana shaking the Kailasa, all in Cave 21, were repaired by the insertion of copper pins and imperceptible filling of the cracks.

ROCK-CUT CAVES PITALKHORA, DISTRICT AURANGABAD.-Improvements to this important but little-known group of caves were effected by the construction of steps to the caves from the hill-top and removal of huge boulders fallen from the ceiling and other debris in the *vihara* adjoining the main *chaitya*.

ROCK-CUT CAVES, AURANGABAD.- A surface-drain was constructed over the top of both the groups of caves to divert rain-water. A retaining wall was constructed in front of Cave 2, to stop the erosion of the courtyard. A flight of steps was constructed for easy access to Cave I. Cracks were filled in the façade of Cave 2.

BIBI-KA-MAQBARA, AURANGABAD.—The south-west *minar* was attended to: the damaged *chhajja* of the cupola and the exfoliated stones in the upper portion were made good in reinforced cement-concrete coated with fine lime-plaster in imitation of the old plaster. Plaster was also applied on the weathered surface of the pillars of the upper storey. The leaking front-cistern was plastered from inside.

BAHMANI TOMBS, ASHTUR, DISTRICT BIDAR.—Besides the removal of vegetation from and around the monuments, the old spongy concrete on the roofs of the *tombs of Mahmud Shah, Torkas Begum and Jahan Ara Begam* was replaced by new cement-concrete. Wide cracks in the domes of the *tombs of Tarkas Begum and 'Alau'd Din* were filled.

QASIM BARID'S TOMB, BIDAR.—The open doors of the tomb were provided with expanded-metal door-frames. The exposed joints in the plinth were pointed. Pipes were provided for the drainage of rain-water from the roof of the *naubatkhana* and wide cracks therein grouted.

MADRASA OF MAHMUD GAWAN, BIDAR.—Portions of the walls of the lecture-hall in this magnificent building were replastered. Door-openings were provided with framed expanded metal, deep pits in the floor filled with boulders and stones and a layer of *morum* spread over the floor.

NAGANATHA TEMPLE, AUNDHA, DISTRICT PARBHANI.—Masonry steps were provided to the colonnaded hall of the temple. The parapet-wall of the porch was repaired, and the missing portions of the coping were replaced. Old wooden shutters in the compound-wall were replaced by new ones.

## *Bombay*

WATER-PAVILIONS, KUMUDGI, BIJAPUR.—The arched openings and ventilators of one of the pavilions were provided with expanded-metal frames to protect the paintings from bats.

ROCK-CUT CAVES, KARLA, DISTRICT POONA.—The missing portions of the partition-walls and door-jambs of the *vihara* were reproduced in reinforced cement-concrete. A drain was provided in front of the *chaitya-hall* by cutting the rock. The approach-road from the bottom of the hill to the caves was repaired, the steps reset and the pathway in front of *Cave 11* improved. Enamelled number-plates were fixed at all the caves.

ROCK-CUT CAVES, PATALESVARA, POONA.—The sloping surface in front of the caves was stone-pitched and the top finished with rough cement-plaster. Pit-holes in the courtyard were filled and the area levelled. A rubble parapet-wall was erected in the south-east corner of the courtyard to prevent the entry of cattle.

FORT, PANHALA, DISTRICT KOLHAPUR.—At this hill-fort, one of the oldest in the Deccan, the roofs of *Tin Darwaza* and *Ambarkhana* were made watertight with tarloid and the cracks filled. The missing coping stones in the parapet-walls of *Wagh Darwaza* and *Dootondi bastions* were replaced and the floor of the former improved. Open joints in the walls were pointed, and stone steps were provided at *Ambarkhana.*

SHANIWARWADA, POONA.—The decayed rafters and planks of *Nagarkhana,* the only surviving monument in the fortified palace of the Peshwas, were substituted by new ones ; preservatives were applied on other woodwork. A crack in the *bastion*

*between the gates of Narayana and Ganesa* was filled. The stone slabs over the drain were reset and replaced where necessary.

ROCK-CUT CAVES, POHALA, DISTRICT KOLHAPUR.—Besides general clearance of these newly-protected caves, silt and debris were removed from the *vihara* and their general appearance improved.

ROCK-CUT CAVES, BADAMI, BIJAPUR.—The longitudinal cracks in the plinth of *Cave 1* were grouted. The accumulations in front of *Caves 3 and 4* were removed **and** parapet-walls constructed. The entrances to the caves were improved, and outcrops of rocks were cut to the ground-level for proper dressing. A stone platform **was** constructed below *Cave 3* for the use of visitors.

MALEGITTI SIVALAYA, BADAMI, DISTRICT BIJAPUR.—The damaged and missing floor of the *sabha-mandapa* of the temple was renewed and the pathway repaired.

GROUP OF MONUMENTS, PATTADAKAL, DISTRICT BIJAPUR.—The damaged compound-wall *of Kad Siddhesvara temple* was repaired, the missing portions of the coping restored and the floor repaired with stone slabs. The floor of *Virupaksha temple* was similarly treated.

FARAH BAGH PALACE, AHMADNAGAR.—The fallen portions of the pillars, doors and windows were restored and plastered. The terrace was made watertight by the filling of cracks. A cracked arch was temporarily supported by a masonry pillar.

GONDESVARA TEMPLE, SINNAR, DISTRICT NASIK.—A wide crack in the *kalasa* of the temple and open joints were filled and pointed.

ROCK-CUT CAVES, KANHERI, DISTRICT THANA.—An overhanging boulder containing a Brahmi inscription in front of *Cave 41* was given a masonry support. A rock-cut channel near *Cave 9* was covered with reinforced cement-concrete slabs.

NAGARESVARA BASTI, BANKAPUR, DISTRICT DHARWAR.—Besides clearing rank vegetation, the top of the temple was freed of accumulated earth and covered with **a** layer of concrete.

## WESTERN CIRCLE

### *Bombay*

HAJIRA, DANTESWAR, BARODA.—The dislodged stones in the masonry of the four corners of the tomb of Qutbu'd Din, the tutor of Salim (later on Jahangir), which had bulged out as a result of the growth of vegetation and percolation of water through damaged spouts, were removed and reset in plumb and new spouts fixed. The missing panels of the perforated window-screens were replaced, and the damaged patches of the roof were made watertight in concrete. Deep and wide cracks were raked off and filled.

JAMI' MASJID, CHAMPANER, DISTRICT PANCHMAHALS.—The step-well behind the mosque was repaired by the rebuilding of the parapet-walls which had collapsed out of the thrust of loose earth behind them. The *minors* were provided with lightning-conductors. Further repairs are in progress.

SIVA TEMPLE, BAVKA, DISTRICT PANCHMAHALS.—The temple is in a ruinous condition owing to the collapse of the *sabha-mandapa, sikhara* and western wall of

the *garbha-griha;* the door-jambs are dislodged, and some of the sculptures are dangerously hanging. As a first step towards the preservation of the temple, the core of the western wall was built up to support the roof, the dead load of superfluous stones on the roof was removed and open joints were filled. The work is in progress.

MOSQUE, ISANPUR, DISTRICT AHMADABAD.—The damaged stone pavement and flight of steps of this small but elegant mosque were replaced by new ones (pl. LIV).

TOMB OF HAZRAT QUTB-I-'ALAM, VATVA, DISTRICT AHMADABAD.—The roofless vaults of the outer bays of the tomb, planned on a large scale but left incomplete, were paved with stone and cement tiles matching the original, to prevent percolation of water into the foundation (pl. LV).

BABA LAULI'S MOSQUE, AHMADABAD.—Earth was rilled and dry-rubble pitching was provided between the plinth of the mosque and the protection-wall built last year to ward off flood-action.

MALAVA TANK, DHOLKA, DISTRICT AHMADABAD.—The collapsed parts of the parapet-wall, originally built to retain the earth dumped along the periphery of the tank, excavated by the Chaulukya queen Mayanalladevi, were rebuilt with an ashlar facing.

BHAMARIA WELL, MEHAMDABAD, DISTRICT KAIRA.—The open joints in the salt-affected brickwork of the three-storeyed step-well, with a flight of steps leading to the central shaft through vaulted rooms, were filled with lime-cement mortar. The brickwork was plastered and underpinned.

### *Saurashtra*

DARBARGARH, SIHOR, DISTRICT JHALAWAD.—The painted walls of the eighteenth-century palace had suffered damage from rains. The missing patches in the walls were built up and the spongy plaster rendered impervious to moisture. The tiled roof was repaired with new country-tiles, battens and beams. The paintings in the hall are now safe from rains.

INSCRIBED ROCK, JUNAGADH, DISTRICT SORATH.—The cracks in the boulder bearing the inscriptions of Asoka, Rudradaman and Skandagupta were carefully grouted with cement. The uneven floor of the room sheltering the boulder was levelled and the joints pointed. A railing was provided all round to prevent visitors from going too near the inscribed surface of the rock.

ROCK-CUT CAVES, UPARKOT, JUNAGADH, DISTRICT SORATH.—The worn-out and slippery stone steps leading to the ground-floor of these Buddhist caves were chiselled and concreted and a few cracks in the caves grouted.

BAVAPYARA CAVES, JUNAGADH, DISTRICT SORATH.—The roof was made water tight by the removal of debris and provision of contour-drains on the rocky surface.

DURVASA RISHI ASRAM, PINDARA, DISTRICT HALAR.—Owing to the proximity to the sea, the thick-grained limestones, of which this post-Gupta temple is built, are affected by salt. The worst-damaged ones were replaced by better ones.

## Rajasthan

GROUP OF MONUMENTS, FORT, CHITTORGARH.—The monuments continued to receive careful attention. The *palace of Fatah* was thoroughly conserved after a preliminary jungle-clearance and removal of heaps of fallen stones. The decayed concrete on the dome of the entrance-gate was substituted by a fresh one. The enclosure and parapet were rebuilt in rubble masonry up to the necessary heights. The cracks in the dome were grouted and the sagging arches in the pavilion rebuilt after the original design. The vertical cracks in the outer facade and door-jambs of the elaborately-carved Jaina temple known as *Sringar Chauri* were grouted. Decayed concrete and loose stones were removed from the dome, which had also to be partly rebuilt on original lines. The entire surface of the dome and terrace was re-laid with concrete mortar. Missing *chhajja-stones* were replaced and rusted iron clamps replaced by copper ones. The *sikhara* of the other *Jaina temple near Sringar Chauri* had been partly repaired last year. This year the vertical cracks were grouted and the dislodged sculptures in the facade refixed. The dome and terrace were rendered watertight with rubble-packing and concreted mortar. In the *temple of Jatasankar* (pl. LVI) the collapsed side-walls of the plinth were rebuilt and the open joints in the roof of the *sabha-mandapa* pointed. The dislodged stones of the *sikhara* were reset in lime-cement and the flight of steps repaired. With the provision of the missing stone pavement the reconditioning of the monument will be complete. The core of the portion of *Banbir's wall* between Topkhana and Sringar Chauri was consolidated by the removal of two courses of loose stones from the top and sections and their re-laying in cement after necessary under-pinning. The hollows were filled with concreted mortar, thus bringing out the original feature of the rubble masonry laid in mortar with coarse grits. In *Rana Kumbha's palace* a few more underground chambers with groined arches on which stands me palace proper, were brought to light in the course of repairs and are being cleared of debris. In the main entrance-gate to the palace, called *Badi Pol*, the rebuilding of loose rubble masonry of the side parapet-walls and fallen portions thereof was taken in hand. The cracks in the vaulted semi-circular chamber in the bastion known as *Navlakha Bhandar* are being grouted and the joints pointed The later accretions abutting against the *Patalesvara temple* were removed, which exposed to view he sculptures and mouldings in its plinth and *mandovara*. The tops of the walls of he adjacent structures are being made watertight, and a roof being provided over the rooms. The *northern gate of the Mahasati enclosure* near the Tower Victory had been blocked by steps and cross-walls: they are being removed. The bulges in the ashlar masonry of the side-walls of the gate were treated, and the niches in the north wall rebuilt (pl. LVII). A proper approach is being provided to the *Samiddhesvara temple*.

GROUP OF TEMPLES, BADOLI, DISTRICT CHITTORGARH.-These neglected temples stand in need of extensive repairs. The problem, created by the stagnation of water from the adjoining stream affecting the foundations and pavements of the temples, was solved by the provision of a proper slope to the enclosure by excavation. The displaced stones of the *sikhara* of the *temple of Ashta-mata* were reset in lime-cement; the gaping cracks were grouted and joints pointed. The brick *sikhara* of *Ganesa temple* having mostly collapsed, two to three brick-courses were removed from the top and sides of the surviving portion thereof and reset in lime-cement. A proper packing of stones was provided to the side-walls of the porch to support the roof.

The damaged stones in the pavements of the two temples are being replaced. To house the large number of loose sculptures a shed is being erected.

### CENTRAL CIRCLE

#### *Bhopal*

GROUP OF MONUMENTS, SANCHI, DISTRICT RAISEN.—Side by side with the chemical treatment and preservation of the plaster on *Stupa 1* (pl. LVIII), the edges of the extant patches of plaster were secured with coarse-grained mortar. A length of about 350 ft. or me *road from the entrance-gate to Stupa 1* was laid in stones, and further work is in progress. The area round *Stupa 2* was dressed up. The whole area was trimmed, And attempts are being made to rear lawns in patches with the expected improvement in water-supply.

FORT, RAISEN.-The reconstruction of the collapsed *Ratnavali Burj* was continued, and the laying of the upper courses of masonry was completed.

#### *Madhya Bharat*

GROUP OF MONUMENTS, MANDU, DISTRICT DHAR.- Large-scale repairs were undertaken to the roof of Jami` Masjid, on which stands a cluster of large domes, all damaged. The cracks in some domes were filled and grouted and their surfaces replastered with toned lime-mortar.

ROCK-CUT CAVES, BAGH, DISTRICT DHAR.-The debris in front of Caves 3 and 4 was removed and the woodwork repainted.

FORT, GWALIOR.- The plaster in Man Mandir Palace was repaired, besides petty repairs to other monuments.

#### *Madhya Pradesh*

FORT, DEOGARH, DISTRICT CHHINDWARA.- Besides jungle-clearance, the domes were made watertight and replastered.

FORT, ASIRGARH, DISTRICT NIMAR.-The pathways were reconditioned and the ditches filled up to prevent stagnation of water.

## B. STATE-MAINTAINED MONUMENTS[1]

### BOMBAY STATE

Repairs to a Masjid, Pharkanda, District East Khandesh, Nadial gate, Vadnagar, District Mehsana, and some temples, District Dharwar, were carried out. The Directors of Local Authorities of respective Divisions and the District Local Boards

1 Material supplied by the respective states

were requested to carry out repairs to approach-roads leading to ancient monuments in the State.

## HYDERABAD STATE

UCHAPPA MUTT, ANAGUNDI, DISTRICT RAICHUR.—Clearance of jungle and debris and petty repairs were carried out, and four masonry pillars were erected to support the roof.

TEMPLE AND SHRINES, GHANPUR, DISTRICT WARANGAL.—The main temple and its twentyfour subsidiary shrines were cleared of rank vegetation and debris, and the court-yard was generally tidied up.

SAIVITE TEMPLES, PANGAL, DISTRICT NALGONDA.—Petty repairs and clearance were undertaken.

MEGALITHIC SITES, DISTRICT NALGONDA.—Boundary-stones were fixed round the prehistoric sites.

FORT, DEVARKONDA, DISTRICT NALGONDA.—Rank vegetation was extensively removed from the fort-wall and the four hundred steps leading to the citadel repaired.

GROUP OF MONUMENTS, HYDERABAD.—General clearance was effected at all the monuments in the city. Necessary repairs were executed to *Puranapul gateway.*

GROUP OF MONUMENTS, GOLCONDA, DISTRICT HYDERABAD.—Apart from general repairs to all the monuments, a large number of cement-concrete pedestals were erected in *Khazana building,* wherein are displayed sculptures and inscriptions removed from different places of Hyderabad and Golconda.

MEGALITHIC SITE, LINGAMPALLI, DISTRICT HYDERABAD.—Vegetation and debris were removed from the site, which has very good specimens of menhirs and stone-circle burials.

FORT, MEDAK.—General clearance and petty repairs were undertaken and are in progress.

FORT, PARENDA, DISTRICT OSMANABAD.—Excavation was conducted inside the fort for the removal of gun-powder and other explosives which had been responsible for casualties. Repairs were carried out to the *buildings* and *fortifications.* The *main entrance* was widened and the approach-road repaired and levelled. Foot-paths to all places of interest inside the fort were provided.

FORT, KALYANI, DISTRICT BIDAR.—General clearance and maintenance were undertaken at almost all the fortifications and old buildings. Foot-paths leading to the archaeological sites were provided.

SIVA TEMPLE, NARAYANPUR, DISTRICT BIDAR.—The temple was cleared of vegetation, and minor repairs were carried out.

MONOLITHIC PILLAR, CHARTHANA, DISTRICT PARBHANL—Clearance of jungle and debris and constructions of drains and a platform around the pillar were undertaken.

## MYSORE STATE

NARASIMHA TEMPLE, VIGHNASANTE, DISTRICT TUMKUR.—AS a preliminary to the reconstruction of the *sikhara* of the temple, which had collapsed several years ago, the arrangement of the scattered architectural fragments was taken in hand.

SRI RANGANATHASVAMI TEMPLE, MEGADI, DISTRICT BANGALORE.—The reconstruction of the *mahadvara* of the temple, following the original design, was completed.

OTHER MONUMENTS.—A large number of new monuments, a few of them with paintings, were inspected, and some were found to be in need of immediate repairs. Necessary conservation-notes for them were drawn up.

## RAJASTHAN STATE

PALACES, AMBER, DISTRICT JAIPUR.—The *Shishmahal* was conserved: the glass-panes were chemically examined and replaced with new ones of the same type, and repairs to the floor in *Jasmandir* were carried out.

GROUP OF TEMPLES, KIRADU, DISTRICT BARMER.—The roofs of five temples were made watertight, and provision was made for the drainage of rain-water.

OTHER MONUMENTS.—The following monuments also received attention: *chhatris* of the past rulers, Amber, District Jaipur; *Minor Rock-edicts of Asoka* and *Mughul gateway,* Bairat, District Jaipur; *Somesvaraj's temple,* Bhangarh, District Alwar; *Ekthamba Mahal, chhatris of Rao Chunda* and images in the *Heroes' hall,* Mandor, District Jodhpur; and *Ravan-ki-chauri* and *Tokesvara images,* where stone-slab sheds were erected to protect the images and stairs were provided for approach to them.

## SAURASHTRA STATE

VIKIA-VAV, PACHHATAR, DISTRICT HALAR.—Silt was removed from the step-well down to the sixth (last) storey of the fourth porch, i.e. the beginning of the well proper. The pillars, seats and roof of the first porch were reset, and the southern wall between the first and second porches was rebuilt.

SARTANJI MANDAPA, PORBANDAR, DISTRICT SORATH.—The interior of the *mandapa* was conserved and the boundary-line demarcated and pillars erected.

TEMPLE, SATSHERI, SIHORE, DISTRICT GOHILWAD.—An approach-road up to the monument was provided and the crevices in its walls and floors repaired.

BRAHMAKUND, SIHORE, DISTRICT GOHILWAD.—The environment of the *kund* was cleaned and the roots of trees removed. The crevices in its interior were treated.

ROCK-CUT CAVES, SANA, DISTRICT SORATH.—The caves were cleared, an approach-road provided and protection notice-board set up.

## UTTAR PRADESH

The following monuments were conserved: *Latif Khan's tomb,* Banaras; *tomb of Takhat Pahlwan,* Agra; *temple of Narottam Kavi,* Sitapur; *Surkuti,* Mathura; *Siva temple,* Bithur, District Kanpur; and a *temple,* Rahman Khara, District Lucknow.

# 5. ARCHAEOLOGICAL CHEMISTRY

## A. TREATMENT OF MONUMENTS

The Archaeological Chemist in India attended to the following monuments.

MONUMENTS, SANCHI, DISTRICT RAISEN.—The programme of the treatment and preservation of the extant patches of ancient plaster on *Stupa I* (pl. LVIII) and its railings (pl. LIX) and gateways were intensely pursued this year. The plaster was freed of vegetation, consolidated, rendered impervious to rain-water and coated with preservatives.

ROCK-CUT CAVES, KARLA AND BHAJA, DISTRICT POONA.—Work on the sculptures and inscriptions was completed in continuation of the previous years' work. The treated surfaces present a very satisfactory appearance and are likely to remain m a good state of preservation for several years to come.

EXCAVATED REMAINS NEAR KALSI, DISTRICT DEHRA DUN.—A large number of bricks in one of the *asvamedha-sites* were treated *in situ*, and the work will shortly be extended to the other two sites.

STATUE IN A TEMPLE, KUSINAGARA, DISTRICT DEORIA.—The colossal Buddha-statue in a temple near the excavated remains was subjected to cleaning: accretions of grease, oil, vermilion, etc., were successfully eliminated by the use of suitable organic solvents, and the stucco figures on the walls were rendered salt-free with paper-pulp. The patches of plaster which did not match the adjacent surface were suitably tinted.

GROUP OF TEMPLES, KHAJURAHO, DISTRICT CHHATARPUR.—Removal of moss and lichen from the sculptures on the *Kandariya Mahadeva temple* was continued this year. The *sculptures* in the open-air museum were generally cleaned and preserved: with me use of zinc silicofluoride for the eradication of moss and lichen the results have been very satisfactory.

LINGARAJA TEMPLE, BHUVANESWAR, DISTRICT PURI.-The *jagamohana* and vimana of the temple, work on which had been started in 1953-54, was m full swing this year. Considerable progress was made in clearing part of the *vimana* of the thick growth o moss and lichen (pl. LX). Freed of algal growth, the sculptures and carvings were subjected to fungicidal treatment to prevent its recurrence.

## B. TREATMENT OF PAINTINGS

The following paintings were treated and preserved under the Archaeological Chemist.

ROCK-CUT CAVES, BAGH, DISTRICT DHAR.- AS REPORTED PREVIOUSLY, on the cave-walls have suffered deterioration on account of oily, tarry and smoky deposits on them and the action of hot gases on the pigments; the greater part of the Pigments has been lost through flaking or alteration and chemical decomposition.

The encouraging results of last year's treatment led to a greater concentration on the preservation of the fragmentary remains of the paintings. Experiments done with a wide variety of solvents and several cleansing reagents, emulsifying reagents and detergents, both in the laboratory and in the field, to a great extent solved the problem of the removal of smoke and grease. It is hoped that with treatment many unrecorded painted panels will be brought to light.

ROCK-CUT CAVES, BADAMI, DISTRICT BIJAPUR.—As a result of the treatment accorded to the paintings in previous years, they have been saved from greater deterioration as their colours have now been fixed to the ground. This year the paintings were subjected to a general clearance and preservation.

FORT, TALBAHAT, DISTRICT JHANSI.—The paintings on the walls and ceiling of a *temple* in the fort, obliterated by deposits of smoke, soot and oil, were taken up. With the help of highly-efficacious cleansing reagents and solvents several panels of entire scenes, unsuspected before, were exposed, and it is expected that more will be found with further treatment.

SUNHERI MAHAL, SIKANDARA, DISTRICT AGRA.—A large painted area was treated and preserved in continuation of previous years' work (pl. LXI A). The flaking colours were fixed to the ground after the removal of surface-accretions.

KHAWABGAH AND MARYAM'S HOUSE, FATEHPUR SIKRI, DISTRICT AGRA.—AS a result of the continued work, many panels were exposed and their original colours brought out after the elimination of darkened varnish. The loose pigments were firmly fixed to the plaster and the entire painted surface strengthened with preservatives. The greater part of the work is now complete.

'ITIMADU'D DAULA'S TOMB, AGRA.—Work progressed satisfactorily on the wall and ceiling-paintings at the monument (pl. LXI B). A large painted area was taken up this year: the pigments were fixed and the loss of colour through flaking checked.

SULTANU'N NISA'S TOMB, KHUSROBAGH, ALLAHABAD.—The extensive paintings on the walls, arches and domed ceiling of the mausoleum were subjected to treatment. Age-old dust and dirt were removed with suitable cleansing reagents and a considerable part of the painted area preserved (pl. LXII A). Operations will be extended to other parts as well.

ASAR MAHAL, BIJAPUR.—The old varnish-coat on the paintings in two rooms on the first floor of the monument had turned yellow, obscuring the designs. The varnish, together with the accretion of smoke, grease and oil, was effectively removed with suitable cleansing reagents over a large painted area.

MAHAKALI TEMPLE, CHANDA.—In the course of work, continued from previous years, some paintings were noticed hidden under a coat of lime. The superficial layer was removed and a large painted surface exposed. The result of the chemical work has been fully documented with detailed photographs in colours and black-and-white (pl. LXII B) and with drawings.

TAMBEKARWADA, BARODA.—The painting in the small chamber on the second floor, treated in the previous year, was generally cleaned this year, when the hall on the same floor was also taken up. The results of chemical treatment obtained at this monument are highly striking (pl. LXIII), and the experience gained here has been very helpful for dealing with similar problems at other monuments.

The following paintings received the attention of the Assistant Archaeological Chemist.

ROCK-CUT CAVES, AJANTA, DISTRICT AURANGABAD.—Before any extensive work of treatment and preservation of the paintings can be undertaken, the problem of the removal of shellac from the painted surface has to be satisfactorily solved. Experiments were made in *Cave 16* by the use of cellosolve and carbitol; while the superficial layer of shellac was removed thereby, there was no effect on the material that had penetrated deep into the interstices of the plaster, the removal of which is necessary for bringing out the original colour-values of the paintings. It was also noticed that parts of the painted surface were coated with some wax which had hardened in course of time and which were difficult to soften. Experiments, however, are in progress, and some paintings have been effectively cleaned (pls. LXIV-LXVI). The broken edges of plaster were secured with fillets of plaster of Paris in *Caves 1,6,16 and 17.*

ROCK-CUT CAVES, ELLORA, DISTRICT AURANGABAD.—The ceiling of the Lankesvara in *Cave 16* was cleaned of all oily and sooty accretions with a view to ascertaining the extent of the painted surface. The painted plaster, which had been at places hanging loose, was properly secured. The *Ramayana* and *Mahabharata* panels on the facades of the main temple were cleaned of moss and lichen with ammonia and zinc silico-fluoride.

VIRABHADRASVAMI TEMPLE, LEPAKSHI, DISTRICT ANANTAPUR.—The ceiling on the outer verandah to the right of the shrine was cleaned of soot, oil, moss and lichen and the paintings thereon cleaned and preserved. The edges of broken plaster were extensively secured. The interior of the temple was also taken up for cleaning.

SIVA TEMPLE, TIRUVANJIKULAM, DISTRICT TRICHUR.—The usual measures of cleaning, consolidation and preservation of paintings and securing of broken plaster were undertaken.

EASTERN CHITTAMBALAM AND VRISHABHAVAHANA TEMPLE, TRICHUR.—Small patches of the painted surface at these monuments were subjected to treatment. The whitewash concealing parts of the paintings was carefully removed.

MATTANCHERI PALACE, COCHIN.—The edges of the loose painted stucco on the second floor were secured by filletting and some painted surface cleaned (pl. LXVII).

DARYA DAULAT, SRIRANGAPATNA, DISTRICT MANDYA.—The ceiling of the outer verandahs, which contain paintings on cloth, was taken up for cleaning, consolidation and preservation. The torn pieces of cloth were restored to their original position and secured and the painted surface consolidated and preserved. Three of the four verandahs have been completed.

## C. TREATMENT OF ANTIQUITIES AND MUSEUM-EXHIBITS

The laboratory of the Archaeological Chemist treated two hundred and twenty-nine copper coins, two silver coins and one lead coin.

The copper, silver and lead coins from the excavation at Salihundam were treated in the laboratory of the Assistant Archaeological Chemist.

The Assistant Archaeological Chemist, Museums Branch, handled upwards of twelve hundred objects of diverse materials, including objects belonging to the National

Museum, Central Asian Antiquities Museum, other Departmental museums and Government Museum, Ajmer, and finds from the excavations at Mathura, Rupar, Jagatgram and Tamluk and from other places. Of them, one hundred and twentythree paintings on silk, cotton and paper and sixty wall-painting panels, belonging to the Central Asian collection, two large-sized paintings on coarse cloth of the National Museum, thirtyseven special bricks from Jagatgram and sculptures at Sarnath deserve special mention. The restoration of the Ganga and Yamuna images, found in innumerable fragments in an excavated temple at Ahichchhatra, was completed. The materials chemically analysed and examined consisted of metal, glazes, cementing material, mortar and water and stone samples. Work on photomicrography and ultraviolet and infrared photography is being initiated.

Nine Jaina bronze images from Singoli (Bigod), District Bhilwada, were treated for display in the Udaipur Museum by the Department of Archaeology and Museums, Rajasthan State.

## D. RESEARCH

GEOCHRONOLOGY.—The experimental part of the investigations of soil-samples from the excavated trenches at Rupar, District Ambala, was completed by the Archaeological Chemist, and the results of the soil-analysis, petrographic examination, phosphate-determination, etc., are being interpreted; the report on the work will be available shortly. Soil-samples were collected from the rock-shelters at Hoshangabad with a view to dating the microliths therefrom on geochronological grounds. It is proposed to examine soil-samples from Rangpur, District Jhalawar, for the correlation of the Black Cotton Soil with the archaeological cultures at the site.

CERAMICS.—The Archaeological Chemist continued his researches on ancient ceramics. As thin sections are useful for the identification of the mineral-inclusion in clay and for the differentiation between local and imported wares, a beginning was made in ceramic petrography, and a large number of slides of ceramic material and detrital minerals were ordered from abroad for comparative study.

The technological aspects of ancient Indian glass were studied with particular reference to the glass-pieces from Kopia, District Basti, and glazed pottery from the same site, Rohtak and Syedpur Bhitri, District Ghazipur, and detailed analyses of the specimens were carried out.

Several specimens of the Northern Black Polished Ware were examined for colour-development and changes in the clay on baking with a view to determining the conditions of its firing and the technique of its fabrication. This investigation led to a new observation, viz., the development on heating of spherulites on the surface of the shining layer of the Ware. The lustre on the surface of the Ware therefore appears to be composed of some easily-fusible material, possibly of organic origin, which undergoes incipient confusion at a low heat. The layer just below the uppermost film was, in most cases, noticed to be buff or orange-yellow. The blackening of the uppermost surface may, therefore, be due to some sort of post-firing treatment, in which the pottery, still hot from the kiln, was coated with some liquid such as a oil, juice of some plant or a similar organic concoction. Natural resins such as shellac or benzoin, vegetable or animal-fats, iron-rich organic musilage, such as plantain- *or amla*-pulp or some similar organic material may have also been responsible for the

production of the lustre. Further research is in progress. A systematic plan for the investigation of problems of ceramic archaeology was chalked out and experimental work initiated on such aspects as temperature-control under firing, colour-change, pyrometry, density, hardness determination and ceramic petrography. The investigation is still in an experimental stage.

PRESERVATION OF PAINTINGS.—The Archaeological Chemist experimented with a large number of solvents for their cleansing properties and possible harmful after effects. Although suitable reagents and solvents, effective for the elimination of darkened shellac-varnish layers and smoky accretions, were found, the problem of the appearance of 'chalkiness' or 'bloom' on the treated surface engaged attention. The 'blanching' effect could be encountered by the employment of a mixture of several solvents of high and low boiling points in suitable proportions, so that the rate of evaporation of the cleansing reagents was not very rapid. A few coupled solvents were also tried, but it remains to be seen whether this effect on paintings can be completely removed by them. In any case, as a result of experiments, reagents for the satisfactory removal of dark shellac-varnish, that obscures the optical values of paintings, were found.

Trial-experiments were also carried out with the preservative properties of some of the recently-developed resins like silicones. It appeared that although silicone-resin could be extremely effective in rendering any surface, stone or plaster, impervious to moisture, its subsequent elimination, if required, would not be an easy matter. 1 tie use of bleached-shellac solution was also ruled out on account of its tendency to turn yellow and brittle and to develop cracks all over the film with age. As the artist of old left the painted surface dull and not glossy, the use of vinyl acetate is to be discouraged Methyl-metha-crylate resin, however, is free from this objection and can be generally recommended.

PETROGRAPHIC STUDIES.-The Assistant Archaeological Chemist prepared about fifty microsections of the rocks used for the monuments at Sravanabelgola, Karkal, Belur, Halebid, Somanathpur, Lepakshi, Koppal and Maski.

PRESERVATION OF THE GOMMATESVARA STATUE, SRAVANABELGOLA HASSAN.-The Gommatesvara Research Committee, appointed by the Government of Mysore in 1949 and reconstituted by the Government of India in 1954 has conducted valuable research on stone-preservation by experimenting with about thirty chemicals including preservatives, fungicides and detergents. A 2½ percent solution of silicofluoride, different graded ethyl silicate, crystal waterproofing and 10 per cent solution of paraffin-wax in solvent oil to form a water-repelling were effectively used as reagents for different purposes connected with the preservation of the statue. The entire statue was cleaned after the *maha-mastakabhisheka* ceremony of 1953, as a result of which it has regained its original appearance. A series of laboratory-experiments were conducted with teepol, silicaseal, cheecol, crystal and silicone water repelling solutions, and the first of these was found to be a good depressing agent It was estimated that only a very small*portion of the actual amount of silica available in ethyl silicate forms an adhesive layer on the treated rock-surface, for0-15 gm. of silica is available in 1 c.c. of silicaseal-solution, whereas 0.0244 gm. of silica per c.c. forms an integral part of the rock-surface. A mixture of granite powder and vinyl acetate solution was found useful for filling up the cracks and depressions in the statue, and an application of different grades of ethyl silicate for imparting a hard the treated area.

## 6. ARCHITECTURAL SURVEY OF TEMPLES

Two officers, one each for north and south India, were appointed in October 1955 for a systematic and comprehensive study of the architecture of ancient temples. As a preliminary to fieldwork, the officers engaged themselves in compiling a standard list of technical architectural terms on the basis of ancient texts on architecture, inscriptions and living traditional *sthapatis* and *silpins*.

In north India, a systematic survey was made of the group of temples at Khajuraho. It was felt that the temples covered a period longer than what was usually accepted, viz. A.D. 950 to 1050. It was noticed that there was an older tradition of granite architecture at the place and that the transition from granite to sandstone was gradual. Thus, taking the Lakshmana temple, one of the finest sandstone temples at Khajuraho, securely dated, on the basis of epigraphical evidence, to A.D. 953-54, as a landmark, the earlier stages would be represented by the Chausath Yogini temple, entirely granite-built, and the Brahma and Lalguan Mahadeva temples, marking the transitional period. A relative chronology of the sandstone temples was worked out on the basis of the style of their sculptures, the design of the *sikharas*, plans and comparative dimensions.

In south India, about twenty temples of known dates, in Chittoor, North Arcot, South Arcot and Tanjore Districts, were examined with a view to obtaining firm data to form the basis for further study. Further, an intensive study of all Pallava monuments—rock-cut caves, monolithic *rathas* and structural temples—was taken up.

# 7. MUSEUMS AND EXHIBITIONS

## A. NATIONAL MUSEUM, NEW DELHI

The galleries were largely rearranged according to different schools. Illuminated charts showing the development of Indian scripts and coins were prepared and displayed. The collection' of sculptures was enriched by the addition of a small image or the Gandhara school, exquisite sculptures from Aihole (pl. LXVIII A) and Pattadakal, early Chola sculptures from Pasupathikoil near Tanjore and a colossal image of. Devi from Basavakalyana. Other important objects were three Chola bronzes (pl. LXVI1I B), twenty punch-marked coins, a gold coin of Gangeyadeva and a large number of miscellaneous coins, besides valuable textiles, gold *Jadau* ornaments, Arabic and Persian manuscripts, jade objects and miniature paintings. The Vice-president and the Prime Minister graciously presented certain gifts received by them from His Majesty King Ibn Saud, the Italian Foreign Minister and others. A guide-book to the Museum was prepared and will soon be printed; a catalogue is being compiled. The preparation of replicas of outstanding sculptures for sale and distribution was initiated.

## B. INDIAN MUSEUM, CALCUTTA

The collection was enriched by the acquisition of sculptures and coins. Among the former category were a stone torso of miniature Vishnu of the late Pala period from Hili, District Dinajpur, presented by Shri B. L. Sharma and a stone sculpture of Venugopala from Bahabpur, District Burdwan, presented by Shri N. D. Ghosh. Of the coins, one was Indo-Sassanian, another Kalachuri two Sarabhapuriya and five Vijayanagara. Of the rest, five were of Akbar, three each of Shah Jahan and Aurangzeb, one each of Farrukhsiyar and 'Alamgir II and four of the East India Company.

## C. CENTRAL ASIAN ANTIQUITIES MUSEUM, NEW DELHI

Additional exhibition-space, consisting of two galleries was created by a ^huffing of the old arrangement, thus being possible the display for the first time, of a large number of antiquities from the reserve-collection consisting of silk paintings, block-prints, stucco figurines, etc. Another gallery formerly utilized for the display sculptures alone, is now being developed into a show-room for the display of excavated objects, mainly pottery, from all over India.

## D. OTHER DEPARTMENTAL MUSEUMS

DELHI FORT MUSEUM.-Many important objects from the reserve-collection were displayed in seven additional table-cases.

SARNATH MUSEUM.—In view of the Buddha Jayanti celebrations, large-scale renovations and alterations were effected to the Museum-building.- A new Brahmanical sculpture gallery and a library-cum-auditorium were created by the utilization of all the space that had so long remained closed to visitors. All notable sculptures were provided with brickwork pedestals encased in teak-ply or with solid pedestals of *shisham*-wood. Smaller antiquities from the reserve-collection were exhibited in new cases. Suitable general and individual labels were provided in all the galleries, and steps were taken to display maps, drawings of the excavated site and photographs of Buddhist remains in the new library-*cum*-auditorium.

The building was electrified and water-supply to the lawns improved. Besides guide-books and picture postcards, plaster casts of two selected Buddha images are now available for sale. A fine image of Agni (pl. LXIX A), discovered in the course of foundation-digging in the premises of the Chinese temple at Sarnath, was removed to the Museum.

NALANDA MUSEUM.—All the space in the existing Museum-building was made available for the display of objects, and additional space will be shortly available with the construction of a new hall. While the final reorganization of the Museum awaits the completion of this hall, an important advance was made by the provision of new pedestals and labels as at Sarnath. The electrification of the building was also taken in hand.

SANCHI MUSEUM.—Within the limited space of the existing building, rearrangements were made in the galleries. The open verandahs were roofed, additional space being thus made available. Provision of new pedestals, labels for exhibits and display of illustrative drawings and photographs improved the look of the Museum.

KHAJURAHO MUSEUM.—Out of the seventeen hundred sculptures in the Museum, over a thousand were listed and catalogued and fiftyfour sculptures from the neighbourhood added to the collection.

KONDAPUR MUSEUM.—All the exhibits were arranged chronologically and provided with labels in English and Telugu.

NAGARJUNAKONDA MUSEUM.—Temporary pedestals were prepared for most of the sculptures in the northern and southern verandahs. Sixtyseven punch-marked coins from Amaravati were acquired.

AMARAVATI MUSEUM.—General and individual labels were prepared in English and Telugu, and a sketch of the Amaravati Stupa, conjecturally restored, was displayed.

HAMPI MUSEUM.—The Curator explored the extensive ruins of Hampi and collected about two hundred sculptural and architectural objects, out of which about a hundred were removed to the Museum.

FORT ST. GEORGE MUSEUM, MADRAS.—The kind gift, by the Governor of Madras, of a dozen oil-paintings, formerly in the Government House, Ootacamund, enabled the opening of a portrait-gallery in the Museum. The general collection was enriched with the acquisition of a collection of Arcot porcelains of the early British period. A valuable collection of Indo-European coins, including some rare types, was purchased from Shri T. T. Srinivasachari. Necessary repairs and improvements to the Museum-building, an essential part of the protected Fort, were carried out, keeping in view both the principles of archaeological conservation and the requirements of the Museum.

## E. OTHER MUSEUMS

STATE MUSEUM, LUCKNOW.—Among the important acquisitions in the Museum were: a fragment of an Asokan capital from Basti (pi. LXIX B); a door-jamb from Saidpur Bhitri, District Ghazipur, bearing Gaja-Lakshmi on one side and Durga-on-lion on the other; two Siva images from the Ashtabhuja hills, District Mirzapur; a brick with an inscription on its edge reading *Damamitasa asvamedhe* in characters of circa first century B.C. (pl. LXIX C); and terracotta seals of the second century B.C. bearing the *svastika*, pellet and tree-in-railing.

ALLAHABAD MUSEUM.—The Museum purchased a large number of objects from Bhita, Kausambi and Jhusi, the finds from the last site including terracottas, particularly of the Gupta period, painted buff and with elaborate coiffures, interesting pottery and a clay seal with the tree-in-railing symbol and a legend, obliterated except for the letters *ma* and *na* in Mauryan characters. Of the objects from Bhita was a reddish stone slab carved with a female figure with outstretched legs, the like of which had been previously found there and at Kausambi. From Arail was acquired a Lakshmi-Narayana sculpture of about the twelfth century. Of the coins, mention may be made of four gold Gupta coins from the Bharatpur hoard, coins of Harigupta, an unknown ruler, and of Ravana of the Yaudheyas.

BHARAT KALA BHAVAN, BANARAS.—The important acquisitions were: five copper celts from Banaras; an image of standing Buddha from Banaras, a head of Buddha of red sandstone from Delhi and an image of Indrani holding thunderbolt from Banaras —all of the fifth century ; bust of seated Buddha from Banaras, of the seventh-eighth century; a dancing female figure from Banaras, of the tenth-eleventh century; and three Chandella copper-plates (p. 30).

PATNA MUSEUM.—The following were acquired by purchase or negotiation: forty-four stucco heads of the Gandhara school; a stone sculpture of Uma-Mahesvara of the medieval school of east India, from Bhelahi, District Champaran; a stone four-handed Durga and a four-headed Brahma—both of medieval date; a stone tablet with a Persian inscription, from Bediban, District Champaran, of the time of Muhammad bin Yusuf; and a stone lintel-piece, from Maheswara, District Monghyr, with a Persian inscription (p. 32).

ASUTOSH MUSEUM, UNIVERSITY OF CALCUTTA.—The Museum carried out exploration along the dying stream Bidyadhari, once a large and important branch of the Bhagirathi. Khas Balanda, marked by the ruins of a recently-discovered stone Gupta temple converted into a mosque, and Dhara, in its neighbourhood, with several mounds, can, according to the Curator, be identified with the Buddhist *vihara* Balanda mentioned in a Nepalese manuscript but unlocated so long. Fragments of a large black basalt image of Manjusri, originally recovered intact from a tank at Bhangor, 2 miles from Dhara, but subsequently reduced to pieces, was removed to the Museum and restored (pl. LXX A). The mound known as Chandraketur-garh at Berachampa 8 miles upstream from Bhangor and 23 miles north-east of Calcutta, proved, on exploration to be rich in early historical material. Apart from the discovery of the Northern Black Polished Ware mentioned elsewhere (p. 71), the antiquities recovered from the site by Shri P. C. Das Gupta included fifteen silver punch-marked coins, some with new symbols (pl. LXXI B), two terracotta seals, one with early Brahmi characters, the upper Part of a terracotta plaque (pl. LXXII A), almost a duplicate of the famous Oxford

plaque, a large number of Sunga (pl. LXXII B) and Kushan terracottas of striking beauty, including toy-chariots of elephant, ram and horse, *mithuna* tablets and moulds of Gupta age and a gold Gupta coin showing the marriage of Chandragupta I and Kumaradevi—all of which were removed to the Museum.

Continued search at Tamluk yielded further terracotta plaques of Sunga and Kushan periods, some of them depicting Jataka-scenes, and an inscribed seal with a seated Devi image of the early Pala period. A terracotta female head was recovered from Panna in the Silavati valley (pl. LXXI A), a series of terracotta heads from Raghunathbari in Midnapur District and early terracotta figurines and pottery, including the Rouletted Ware, from Bachri in Howrah District and Harinarayanpur in 24 Parganas. From Tilda, District Midnapur, came a unique object, viz. a terracotta piece with three lines of Greek inscription, the middle line of which, according to Father P. Turmes, S. J., of St. Xayier's College, Calcutta, may mean that the terracotta was 'an offering to the "East Wind and the Dawn",' i.e. 'the East Wind that comes with the Dawn'. Of the other collections, mainly through gifts, mention may be made of a Varahi image of the ninth and a Mahishamardini image of the tenth century, both from Hooghly District; a rare figure of a *rishi* from Nadia; two bronze sculptures of Vishnu of about the eleventh century from District Murshidabad (pl. LXX B); fortyone objects of art comprising Rajasthani, Mughul and Pahari miniatures and Nepalese bronzes from the collection of the late A.C. Gupta; a rare large textile piece painted with storied panels from Bali Island, presented by Dr. Suniti Kumar Chatterji; a copper cast coin of ship-type from Tamluk; a bilingual copper coin of Eukratides; five Puri Kushan coins from Manbhum; a gold coin of Sasanka from north Bengal; six gold coins of the Kalachuri Gangeyadeva; and two gold Vijayanagara coins of Krishnarayadeva.

STATE MUSEUM, GAUHATL—A gold plaque with Chinese inscriptions of historical importance on both sides (pl. LXXIII A and B) was an interesting acquisition, its significance, as kindly supplied by the Embassy of the People's Republic of China in India, being as follows: The plaque is a sort of credential—letter of credence. This plaque was issued by a Chinese Emperor Yun Lo, of the Ming dynasty, in 1407. Anybody carrying this plaque should be treated with all respect and rendered all kinds of facilities, such as man-power, food, conveyance, etc., by local authorities wherever he went. On one side of the plaque there are twelve Chinese characters purporting Royal Decree of the Emperor. Anybody who disobeys the Royal Decree should be ordered to death", and on the other side, two Chinese characters, "Hsin Fu", i.e. letter of credence . The plaque was left behind in India by Cheng Ho when he was carrying out his expedition to the west. Cheng Ho was a great Chinese traveller of the Ming dynasty.'

The Museum also acquired a mithuna-sculpture with a bearded male figure, of the twelfth century, and three gold coins, presented by the Government of Bombay.

STATE MUSEUM BHUVANESWAR.—Among the notable acquisitions were: an image of Avalokitesvara, 8 ft. high, from Jharapada near Bhuvaneswar, an unidentified group with a male figure held by a woman in her lap and a sculpture of about the thirteenth century depicting Krishna attended by *gopis*. Fortynine silver punch-marked coins were recovered from Jagamara near Khandagiri hills, and two gold coins were received from the Central Museum, Nagpur. Six hundred and ten palm-leaf manuscripts were added to the existing collection, and a few Rajput paintings were purchased.

GOVERNMENT MUSEUM, MADRAS.—A collection of beads, one hundred eightynine of carnelian, three of chalcedony, one of greenstone and twentythree of bronze, was

salvaged from a tomb cut out of laterite at Nadukanad Parambu, District Malabar. Fifteen cylindrical beads from Zanzibar, called trade-wind beads, five each of red and yellow glass, two of blue glass and three of green glass, were obtained from Dr. Van der Sleen of Holland. Seventeen metal images and twentytwo temple-utensils were obtained as treasure-trove finds. Among the other acquired objects, mention may be made of an early Pallava stone figure of Vishnu and one leaf of a copper-plate grant, said to be from Tirupparankunram near Madura; the latter, though incomplete and without the mention of any ruler, was inscribed in characters of the early tenth century and might have been issued during the rule of an early Pandyan king.

Apart from treasure-trove finds (p. 66), two copper coins of Ceylon, one silver Chola coin and six copper Roman and Byzantine coins were purchased. Five gold coins of the Kalachuri Gangeyadeva were received from the Central Museum, Nagpur. A half-rupee of Travancore was presented to the Museum by the finder.

PRINCE OF WALES MUSEUM, BOMBAY.—Improvements in the sculpture-gallery in the north and south verandahs of the ground-floor were effected by the provision of brick pedestals for the sculptures. The checking and display of the coin-collection was taken up. The Chemical Branch cleaned and preserved a large number of objects either belonging to the Museum or received from different sources.

OTHER MUSEUMS IN BOMBAY.—The *Kolhapur Museum* acquired a few silver and copper coins, thirty stone sculptures consisting of images and decorated pillars, an ivory image of Krishna on cobra, images of Shivaji and Shahu Chhatrapati, nine old guns and many old arms. In the *Shri Bhavani Museum, Aundh*, a few metal sculptures were purchased; old labels were replaced and new ones provided.

MUSEUMS IN SAURASHTRA.—Steps were taken to rearrange the *Junagadh and Rajkot Museums*. The *Barton Museum* was completely reorganized and lists of exhibits prepared. Selected gold and silver coins of medieval age were handed over to the Rajkot Museum by the Jhalawar district-treasury.

CENTRAL MUSEUM, NAGPUR.—The most important acquisition was a copper-plate inscription of Nannaraja, son of Tivaradeva, found at Adbhar in Bilaspur District. A stone inscription, in thirteen lines, of the time of the Kalachuri Yuvaraja I, describing the conquests of the king, was found at *Karitalai*, District Jabalpur An examination of the coin-cabinet brought to light hitherto-unknown gold coins of Somesvara of the Naga dynasty of Chakrakota. An inventory of the hoards of coins and seals found in Madhya Pradesh was prepared.

GWALIOR MUSEUM.—Coins of the Naga rulers of Pawaya, stored in the Museum, were studied and catalogued.

STATE MUSEUM, NOWGONG.-The State Museum of Vindhya Pradesh was formally opened on the 12th September 1955. The chief collection in the Museum came from Rewa and Shahdol Districts.

MUSEUMS IN RAJASTHAN.-The acquisitions were as follows: Rajasthani costumes including *chhint*-designs, woollen coats, etc., by the *A war Museum;* images of Siva and Parvati and a Jaina image of the Vikrama-year 1250 (AD. 1193) one silver and two copper coins of A.H. 986 (A.D. 1578-79) and paintings of different Rajasthani schools by the *Central Museum at Jaipur*; eleven Rajasthani paintings and sixtyone silver Mughul coins by the *Sardar Museum at Jodhpur*; and a bust of Siva from Kalyanpur and nine bronze Jaina images by the *Victoria Hall Museum at Udaipur.*

RAJPUTANA MUSEUM, AJMER.—Three Jaina images of white marble were obtained from Baghera, each in two fragments; the oldest of them, dated in the Vikrama year 1195 (A.D. 1138), represented Rishabhadeva and had the curly hairs on the head shown by spiral knots, the *Srivatsa-mark* represented by a flower and the soles of the feet carved with *chakra*. The other two represented Santinatha.

GOVERNMENT MUSEUM, SIMLA.—The following were the important acquisitions: two stone images from Kharar, District Ambala; objects, including coins, seals, and pottery, from Sanghol, District Ludhiana; two hundred and ninety Kangra paintings; and an illustrated manuscript *Janam-sakhi* in Gurmukhi.

## F. EXHIBITIONS

Some of the Museums mentioned above organized exhibitions on special occasions and others partook in other general exhibitions.

The *National Museum*, on the occasion of the annual meeting of the Central Advisory Board of Archaeology held an exhibition to display the recently-discovered antiquities and current archaeological activities in the country; the participation therein of non-Departmental organizations contributed greatly to its success. Two other exhibitions, showing the gifts received by the Prime Minister during his tours to European countries, were also held.

The *State Museum, Lucknow*, held a special exhibition of new and rare objects. The *Indian Museum* and the *State Museum, Bhuvaneswar*, lent objects to the exhibition in connexion with the Calcutta session of the Indian History Congress; the latter Museum also displayed Orissan art-objects at Cuttack. The *Government Museum, Madras*, exhibited a number of ancient temple-utensils, many of them of the early Chola period. The *Mysore Museum* partook in the Kannada Sahitya exhibitions held at Mysore and Raichur, wherein were shown original copper-plate grants, photographs of monuments and sculptures and impressions of stone inscriptions bearing on the history of Karnataka. The *Kolhapur Museum* displayed sixteen bronze Roman objects in an exhibition arranged in the Prince of Wales Museum, Bombay. The *Museums in Saurashtra* took part in the Gramodyog Pradarsan at Rajkot. Objects belonging to the *Rajputana Museum, Ajmer*, were displayed in the Educational Mela held at Ajmer and in the exhibition of historical manuscripts, paintings, etc., at Patna. The *State Museum, Simla*, lent important Kangra paintings to the Lalit Kala Akadami for exhibition abroad.

The *Western Circle* of the Department of Archaeology held two exhibitions, respectively at the Museum and Picture-gallery, Baroda, and at the Prince of Wales Museum, Bombay. The *Epigraphical Branch* of the Department lent representative epigraphs to the exhibition of the All-India Oriental Conference at Annamalainagar. The *Department of Archaeology, Mysore*, took part in the exhibition of the Kannada Sahitya Sammelan at Mysore and Raichur; it also sent representative photographs of Muslim monuments to the historical, cultural, scientific and Tibbi exhibition at Kurnool.

## 8. ARCHAEOLOGICAL GARDENS

DELHI.—A new garden was laid around *Khan-i-Khanan's tomb:* water-connexion was secured and pipe-lines laid for the proper maintenance of the lawns. The approach to the garden in *Humayun's tomb* was improved, and *Acacia modesta* edging was provided to prevent trespass on the lawns. The *central nursery,* located in the compound of the Central Asian Antiquities Museum, had to be shifted at a short notice and was temporarily established within the compound of Humayun's tomb, where a great part of the. uprooted plants was transplanted and saved from destruction. A wire-netted fence was provided for the protection of the oval lawn in front of the Naubat-khana, *Red Fort,* frames for creepers were **erected** in *Lodi Gardens,* and power-driven lawn-mowers and sprinklers were introduced. An area of about 4 acres was relawned with grass in *Safdarjang.* Plants and seeds were supplied to Circle-offices for use in their gardens, and some new varieties of plants were reproduced at the nursery. In spite of a not very satisfactory water-condition, particularly during the summer months, the gardens were maintained in a good and trim condition throughout the year by judicious and seasonal horticultural operations.

AGRA.—The lawns in *Sikandara, 'Itmadu'd Daula* and *Taj* gardens were regrassed and bare patches returfed. The existing canna-beds in the Taj gardens were redesigned, and new canna-groups were put up in the Diwan-i-'Am area *of Agra fort.* The existing shrubberies in all the gardens were overhauled and old and gappy hedges replaced. The lower portion of the *Khan-i-'Alam nursery,* taken over from the U. P. Government on the 1st March 1956, was designed by the doing away with of a great deal of negative factors. The glass- and chick-houses of the *Taj* gardens and *Khan-i-Alam* nursery were renovated. Propagational activities remained in full swing, and new choice varieties of timbers, bulbs, roses, shrubs, etc., were introduced. Subsidiary nurseries were also developed in *Sikandara* and *Ram Bagh* gardens. The archaeological gardens competed with other public gardens on the occasion of the local flower-show in February 1956 and secured the largest number of prizes for annuals as well as other plants. All the eight gardens were kept trim and tidy and attracted a large number of visitors.

OTHER GARDENS.—To beautify the monuments at *Sarnath, Kusinagara, Nalanda,* etc., turfs and flower-beds were reared. Small gardens were laid round the palace of Padmini at *Chittorgarh,* in the enclosure of the Jami' Masjid at *Champaner,* District Panchmahals, and on the bank of the excavated portion of Sahasralinga tank at *Patan,* District Mehsana. The growth of small gardens in the compounds of the monuments, where water-supply was easily available, was encouraged. Some gardens, e.g. at *Pinjore, Bangalore,* etc., continued to be maintained by the respective State Governments on an agency-basis.

The gardens inside the *Amber palaces* were maintained by the Rajasthan State, and steps were taken to provide *Mohan Bari* garden outside the palaces with a motor-pump.

## 9. TREASURE-TROVE[1]

BOMBAY.—Eight copper coins were found at *Jhaloregadh,* District Mehsana, including one of Faiz Tughluq, two of Mahmud Shah I, one of Akbar, one of Ahmad Shah I and one of Muzaffar Shah II of Gujarat. One silver coin of Aurangzeb, dated A.H. 1109, and six silver coins of Mahmud Shah were found at *Khadiarpara,* District Kaira. Besides, a hoard of twenty gold coins came from *Waive,* District South Satara, six silver coins of the Later Mughuls and four copper coins from *Ahmadabad city* and a hoard of silver coins from *Varad,* District Ratnagiri.

Bars of lead, each weighing 99 to 117 lbs. and bearing the date and name of an individual or a company, were found at *Baroda.* The date mentioned on the bars is A.D. 1791, and the inscriptions on them read 'Allice Mill', 'Lead Company', etc., suggesting the activities of a lead-importing or exporting firm at Baroda.

HYDERABAD.—A hoard of thirtyseven Mughul coins from *Paidipalli,* District Warangal, and a hoard of twentyeight Qutb Shahi coins and four Mughul coins of copper from *Janagama,* District Nalgonda, were reported.

MADHYA BHARAT.- A dozen gold coins of the Sultans of Delhi and two hundred and seventynine coins of Aurangzeb were found in District Guna

MADHYA PRADESH.- The finds consisted of: a hoard, weighing sixteen seers, of copper coins of the Bahmanis of Gulbarga from Dhotra, District and fortyone Mughul coins of silver from Barela, District Chhindwara; fifteen silver coins of the Mughuls and six hundred and eightyfive copper coins of the Bahmanis from Borakhedi, District Buldana; fortyone Mughul coins of silver from District Sagar; a hoard of Later Mughul coins of silver from Chhindwara; and one hundred and nine coins of Gangeyadeva, the Kalachuri king of Tripuri, from Barela, District Jabalpur.

MADRAS.- Of the finds brought to the notice of the Madras Government, the finds of one hundred and eighteen silver rupees of Victoria and Edward VII, fifteen gold Swami-Pagodas of the East India Company and a Travancore silver half-rupee of Balaramavarma deserve mention.

The following bronze images from Tanjore District deserve mention: Vishnu and Bhudevi images, one each, from Inam Endadi; two Vishnu images and one each of Kaliya Krishna, Bala Krishna, Rama, Hanuman, Sita, Sridevi, Bhudevi and Tirumangai Alvar images-all from Tiruvalangadu; one image of Chandikesvara from Kurichi; one image of Kali from Sholampatti; and two images of Durga from Andakudi.

MYSORE.- A small hoard of ten gold coins, attributed to Kentirava Narasaraja Wadiyar, was reported from Thippur, District Mandya.

RAJASTHAN.- The following were reported: nine Gadhaiya coins from Badoli District Chittorgarh; one hundred and sixtysix coins, including tribal, punch-marked and Kshatrapa coins, from Nagari, District Chittorgarh; and one gold coin of Ghiyas

[1] Material supplied by the Treasure-trove Officers of the respective States.

Shah Khalji of Malwa, dated A.H. 880, and one copper coin of 'Alau'd Din Mahmud II of Delhi, bearing a legend in Devanagari script, from *Chittorgarh.*

Among the other finds brought to notice, sixtyone silver Mughul coins from *Jodhpur* and one Tughluq coin from *Gagraun,* near Jhalawar, may be mentioned.

SAURASHTRA.—A hoard of fortyfour copper coins was found in the course of clearance of the rock-cut caves at *Talaja,* District Gohilwad. It included one coin of 'Alau'd Din Muhammad Shah II (A.H. 695-715), fifteen coins of Ahmad Shah II of Gujarat (A.H. 855-863), twentythree coins of Mahmud Shah I (A.H. 863-891), one coin of Muzaffar Shah II and one coin of a Delhi Sultan. Two copper coins from *Pindara* and one copper and one silver Kshatrapa coin from *Naisra* were also reported. A hoard of silver and gold coins, the latter sixtyone in number, was found at *Porbandar.*

TRAVANCORE.—A collection of thirtyfive gold coins, called *rasi-panams,* was reported from *Puthady Thavalam,* Devicolam Taluk, High Ranges.

UTTAR PRADESH.—Eight silver coins of Shah Jahan and twenty of Aurangzeb and a hoard of one hundred and ten silver coins of the East India Company were discovered respectively at *Bhedauha* and *Bagadiha,* both in District Basti.

## 10. OTHER IMPORTANT DISCOVERIES

STONE AGE SITES IN NAGARJUNAKONDA VALLEY.—Shri K. V. Soundara Rajan found the valley to be the venue of a rich Stone Age industry. Successive stages of palaeoliths in the form of cores, flakes and blades were noticed, and handaxes, cleavers, pebble choppers, scrapers, Levallois flakes and blades, thought to be the continuation of the culture available further west in the Kurnool area, were picked up. A microlithic industry in agate, chert and jasper was also observed.

PALAEOLITHIC SITE IN MYSORE.—Dr. M. Seshadri discovered a palaeolithic site at the foot of the *Banasandra hill-range*, District Tumkur, where large quantities of rounded quartzite pebbles were found to occur in the dried-up stream-beds. A cursory survey revealed the existence of artefacts of the Abbevillian and Acheulian techniques.

PALAEOLITHIC SITE IN BIJAPUR DISTRICT.—A palaeolithic site in the Malaprabha river-bed was discovered by Shri M. N. Deshpande near *Nandikeswar* on the way to the famous group of temples at Pattadakal. The tools contained handaxes, cleavers and pebble tools like choppers and chopping-tools (pl. LXXIV A). Most of the tools were rolled and were found lying loose in the river-bed.

STONE IMPLEMENTS IN POONA DISTRICT.—Dr. H. D. Sankalia informs that Shri Zainuddin Ansari discovered sites with tools of Series II (p. 4), viz. *Khed* on the Bhima, *Induri* on the Indrayani and *Chinchani* on the Ghod. Khed had, in addition, cleavers and flakes of dolerite of Series I.

PALAEOLITHIC SITES IN MADHYA . BHARAT.—Two years ago palaeoliths were discovered at Mandasor by Shri V. S. Wakankar, who brought them to the notice of Dr. H. D. Sankalia. This year, a systematic study of the area was begun by Shri A. P- Khatri, who found over a hundred tools, some of them *in situ,* at *Mandasor* and its vicinity. He also collected similar tools from *Sonita* on the Chambal, about 100 miles from Mandasor.

PALAEOLITHIC SITES IN SOUTHERN RAJASTHAN.—Shri S. R. Rao reports the discovery of two palaeolithic sites near *Chittorgarh,* situated at a distance of about 2 miles from each other, in a *nulla* joining the river Berach. The recovered palaeoliths consisted of handaxes, cleavers,. choppers and scrapers (pls. LXXIV B and LXXV). He also found a double-pointed handaxe, an ovate and a few cleavers and scrapers in the *nulla* joining the Berach river near *Nagari.*

PALAEOLITHIC SITE IN NORTHERN RAJASTHAN.—Shri K. V. Soundara Rajan discovered a palaeolithic site on the banks of the Sanwan Nadi, an affluent of the Chambal, near *Bhangarh,* District Alwar. The north bank had a basal cemented gravel superimposed by silt, while the south registered two cycles of implement-bearing gravel-beds alternating with silt-deposits. Broken blocks of cemented gravel lay strewn in the pebbly bed of the river. The industry was mainly of the 'Madras' (Abbevillio-Acheulian) type, of which a development, up to the emergence of Levalloisean tools, appeared to be available in the various horizons.

MICROLITHS IN THE NILGIRIS.—An examination of the road-section within a radius of 3 miles from *Pykara* enabled Dr. H. D. Sankalia to pick up flakes

with bulb and discoid-like cores of quartz. One of the quartz flakes appeared to be a burin.

MICROLITHS FROM POONA DISTRICT.—Fluted cores of chalcedony were found at *Theur* on the bank of the Mala by Shri M. S. Mate of the Deccan College, and in the golf-ground adjoining the Deccan College at *Poona* by Dr. H. D. Sankalia.

MICROLITHS IN BOMBAY.—About 10 miles south-east of Dohad in Panchmahals District was found a microlithic site at *Bavka,* known for its medieval temple, with blades and fluted cores of fine-grained quartz, reports Dr. P. M. Joshi.

MICROLITHS IN KUTCH.—Microliths were discovered by Shri S. R. Rao at several sites. About 20 miles north-east of Bhuj, *Ladai* yielded a large number of parallel-sided blades of chalcedony, wherein the crested-ridge technique was clear. From *Rambhau,* 8 miles from Kanthkot in the hilly region of Bhachau Taluk, a few fluted cores were recovered. *Luni,* 25 miles east of Mundra on the south sea-coast, yielded blades and flakes. *Desalpar* in Nakhtrana Taluk contained microliths along with Harappan pottery; unlike other Harappa sites, where the ribbon flake is the only surviving form of microliths, blades and a lunate retouched along the arc were found here, which may be a pre-Harappa microlithic industry similar to the Rangpur microlithic industry.

MICROLITHS IN KABRA PAHAR, MADHYA PRADESH.—Dr. M. G. Dikshit discovered microlithic tools in the painted rock-shelters at Kabra Pahar. Consisting of long blades, mostly with serrated edges, lunates and cores of chalcedony, jasper and agate, the tools were similar to those found at Jabalpur (Chhota Simla), Pachmarhi and Adamgarh.

ROCK-SHELTERS IN VINDHYA PRADESH.—Shri S. K. Dikshit found two rock-shelters known as *Ponr-ka-data* and *Putli-ka-data,* near Deora in Tahsil Bijwar District Chhatarpur, with paintings, mostly in red ochre and occasionally in yellow, depicting several animal-forms such as the deer, *sambhar,* elephant, bull, *nilgai, chital,* tiger, dog, peacock and fish, besides a human figure holding a weapon, possibly a stick with an implement fixed as its end.

MICROLITHS IN RAJASTHAN.—A few microlithic sites were located in the mounds on the banks of the Berach and Gambhiri rivers by Shri S. R. Rao (pl. LXXV1 A) *Khera,* about 2 miles to the east of Chittor, yielded fluted cores and Wades with serrated edges and triangular or trapezoidal sections, of chalcedony and agate. About 2 miles west of *Chittorgarh* on the bank of river Berach, a few flakes, a blade and a fluted core again of chalcedony and agate, were found. An unfinished specimen of lunate on quartz was an interesting specimen. .

Dr. S. P. Srivastava reports the discovery of microliths at *Jhalrapatan* near Jhalawar.

POLISHED STONE AXE FROM UTTAR PRADESH.- *Musanagar,* District Kanpur, yielded a polished stone axe and some important Sunga and Kushan sculptures, according to information received from Shri M. M. Nagar. Shri B. B. Lal collected the Northern Black Polished Ware as well from the site.

NEOLITH FROM WEST BENGAL.-A shouldered celt of stone (pl.LXXVI B) was found at *Deulbarh,* District Midnapur, by Shri S. K. Mukherji of the Eastern Circle of the Department of Archaeology.

PROTOHISTORIC SITES IN KUTCH.- Two Harappa sites were located by Shri S.R. Rao. One of them was Desalpar, in Nakhtrana Taluk, on the left bank of the Morai

where a section of the mound was found exposed. The pottery was almost identical with that of Harappa, the more outstanding types being the perforated jar, convex-sided bowl, handled sauce-pan and huge jar with concave neck. The presence of microliths—blades and lunates—and objects like copper and conch bangles and steatite beads indicated the potentialities of the site. The second site, not as promising as Desalpar, was *Todia Timbo,* about 4 miles west of Kothara in Lakhpat Taluk. The dish-on-stand and convex-sided bowl were some of the important Harappan pottery-types found here. The sites imply that the Harappans touched the north and south coasts of Kutch in their southward movement to Saurashtra and Gujarat.

PROTOHISTORIC SITES IN SAURASHTRA.—Shri S. R. Rao brought to light the following sites: *Babarkot*, in Paliad Taluka of Gohilwad District, having an extensive mound with Harappan pottery, e.g. dishes and their stands, heavy-rimmed troughs and sherds with bichrome painting, certain features showing a transition from the Harappan to a later culture—e.g. dishes with beading at the rim, bowls with carination at the shoulder and the red-slipped surface developing into a lustre, as in Rangpur IB; and *Devalia,* a mound 1 square mile in area, on the right bank of the Bhadar, not very far from Rangpur, with the same pottery as at Rangpur, viz. Harappan—paintings in black on red and chocolate on buff, designs in bichrome and reserved slip,—transitional and post-Harappan, e.g. dishes with beaded rim and grooved shoulder, painted black-and-red ware and high-necked jars.

Shri P. P. Pandya discovered sites of the Harappa culture near *Kinner Kheda* in Sorath District and *Moti Dharai* in Gohilwad District. He also discovered a protohistoric site yielding black-and-red pottery near *Una* in Sorath District.

PROTOHISTORIC SITES IN BOMBAY.—Two protohistoric sites, viz. *Alau* and *Bhimpatal* in Dhandhuka Taluka, with Harappan, transitional and post-Harappan elements, were found by Shri S. R. Rao. Another protohistoric site was *Kanjetar* near Mul-Dwaraka, where certain Harappan pottery-types like the dish, convex-sided bowl, handled sauce-pan, etc., though with a deteriorated fabric, were found.

CHALCOLITHIC SITES IN CHAMBAL VALLEY.—Shri N. R. Banerjee explored a part of the Chambal valley south of Nagda and discovered two sites, *Takriada*, 3 miles, and *Bhilsura,* with a well-preserved mound, 6 miles to the south of Nagda, both containing the characteristic chalcolithic assemblage of painted red and black-and-cream wares and microliths, including a fairly large number of fluted cores and parallel-sided blades from the latter site.

PROTOHISTORIC SITE IN HYDERABAD—Dr. P. Sreenivasachar reports the discovery of a site at *Ter* in Osmanabad District, with pottery of the protohistoric and early historical periods.

MEGALITHS IN MYSORE.—Dr. M. Seshadri reports the discovery of megaliths at *Narasamantala* and *Arakalavadi* in Chamarajanagar Taluk, *Chinnasandra* and *Konganahalli* in Chintamani Taluk and *Jedigenhalli* and *Kongarajapalli* near Kolar.

SITES WITH PAINTED GREY AND N.B. P. WARES IN UTTAR PRADESH—Shri B. B. Lai discovered a large number of sites with the Painted Grey Ware and Northern Black Polished Ware; some of them had either and others both. The following had both the Wares: *Poiya,* on the left bank of the Yamuna, 4 miles upstream from the tomb of 'Itimadu'd Daula at Agra; *Renuka,* 10 miles to the west-north-west of Agra, on the right bank of the Yamuna; *Mahuar,* on the way to Fatehpur Sikri from Agra, 12 miles

from the latter- *Noh*, on the Bharatpur-Agra road, 4 miles from the former, already known for its early historical Yaksha image; *Bhej*, 3 miles to the east of Deeg, on he Deeg-Mathura road; *Aring*, 4 miles to the east of Govardhan on the Govardhan-Mathura road; *Sankethan*, located midway between Nandgaon and Barsana; *Sankisa* ancient Sankasya, in Farrukhabad District; *Farrukhabad*, with a high mound with ancient material at its north-western end; and *Lucknow*, where, from the exposures on the side of the river and from the deep trenches recently dug for laying a sewer-line in the high mound of Lakshman Tila, right in front of Bara Imambara, were recovered sherds of the Northern Black Polished Ware as well as of fine grey ware, amongst which one piece had the remnants of some design painted in black pigment.

Sakhitara, close to Govardhan in Mathura district, Chhata, a Tehsil headquarters of the same district, and Bamni Khera, 43 miles from Delhi on Delhi-Agra road, had sherds of the Painted Grey Ware, but the Northern Black Polished Ware was absent.

The Northern Black Polished Ware was found to occur at the following sites: *Erachh*, 42 miles north-east of Jhansi, on the right bank of the Betwa; Chhota Belma, 6 miles from Moth, a Tehsil headquarters in Jhansi District, on the Moth-Samthar road; Mati Kisanpur, 28 miles from Kanpur, on the Kanpur-Kalsi road; Bara, 5 miles towards Kanpur from the last site; Bithur, on the right bank of the Ganga, 12 miles upstream from Kanpur, in the area with temples dedicated to Valmiki; Ayodhya, where the ancient mound is largely covered up by modern habitations, but where, from rain-gullies near `Janma-bhumi', was noticed old material; Sravasti, Districts Gonda-Bahraich; and Singraur, identified with Sringaverapura of the *Ramayana*, on the left bank of the Ganga, 20 miles up Allahabad. At many of these sites, i.e. Mahuar, Erachh, Chhota Belma, Bara, and Ayodhya, large-sized bricks with typical finger-marks were seen. Bithur, Ayodhya, Sravasti and Singraur also yielded sherds of fine grey ware, no painted sherd, however, having been noticed so far.

Shri M.M. Nagar found the Northern Black Polished Ware, besides Kushan terracottas and a stone image of Siva of a rare variety, at *Lakueswar* Dih in Ballia District.

N.B.P. WARE FROM BIHAR.- Dr. D.R. Patil noted the existence of the Northern Black Polished Ware at *Bodh Gaya*, on a mound west of the temple, and Pirnagra Deorhi in Monghyr District.

Shri V.K. Mishra discovered a mound at *Sonitpur*, 3 miles west of Bela railway-station in Gaya district, having the Northern Black Polished Ware with golden and silvery polish, polished fragments of sandstone and cast coins.

N.B.P. AND ROULETTED WARE FROM WEST BENGAL.- Shrimati D. Mitra found, among other early historical antiquities, the Northern Black Polished Ware at the site of Chandraketur-garh at Berachampa, District 24 Parganas. The site also yielded sherds of the Rouletted Ware, punch-marked coins and remarkable terracotta figurines (p.61).

ASOKAN CAPITAL AT BASTI.- Shri M.M.Nagar reports the discovery of the abacus of an Asokan capital (pl. LXIX B).

NEW CAVES AT BHAJA, DISTRICT POONA.- Two more caves were discovered by Shri M.N. Deshpande, one a vihara and the other a chaitya. The vihara, probably unfinished, was situated about 200 yards to the south of the famous vihara-cave containing sculptures of Surya and Indra and had a hall measuring 21 ft. 9 in. X 14 ft. and three cells on either side and an unfinished one on the back wall. The *chaitya*,

another 200 yards away to its south, was almost circular on plan with a diameter of 8 ft. 10 in., with the *stupa-shrine* at the centre.

AN EARLY CAVE AT AJANTA.—During the clearance of debris of a retaining wall which had collapsed in a landslip, a new cave, a *vihara,* of the earlier group of the second century B.C., was discovered by Shri Abdul Waheed Khan. It was found to have a main hall, about 12 ft. square, and three cells, respectively on the front, right and the left sides, each with stone beds and pillows. Over the cell-doors were canopies of *chaitya*-windows, with the Buddhist railing-pattern within it and also connecting the other chaitya-window motifs (pl. LXXVII). There was a string-course of pyramidal design running all round the wall at the ceiling-level. On the outer portion of the front wall was an inscription in shell-characters. The main entrance of the cave was blocked up by bricks, measuring 19 X 9 X 3½ in., probably by the excavators of Cave 16 with its very imposing entrance flanked by an elephant carved on either side. During the clearance of the cave, fragments of high-necked sprinklers of the Red Polished Ware were found.

CAVES IN SAURASHTRA.—A cave in Uparkot at *Junagadh* and three caves at *Rana-para* in Baroda hills were discovered by the Superintendent of Archaeology in Saurashtra.

AN EARLY HISTORICAL SITE IN MADHYA PRADESH.—Dr. M. G. Dikshit informs that at *Balpur,* on the Mahanadi, the washings of the occupational strata, varying from 5 to /it above the natural alluvium, now being gradually washed away by heavy floods of the river, yielded coins of different periods. The pottery, in which red ware predominated, showed an occasional sprinkling of carinated dishes with inverted firing, commonly found at the Satavahana sites, and ridged *handis* having rounded base similar to those of about the seventh century from the Sirpur excavation. Amongst the sophisticated forms was a small flask with a large flaring rim.

EARLY HISTORICAL SITES IN KUTCH, SAURASHTRA AND BOMBAY.—The following early historic sites were discovered by Shri S. R. Rao in these States: *Paliad* in Gohilwad District of Saurashtra; *Taraghra* in Paliad Taluka and *Nagini* in Dhandhuka Taluka, in Bombay State; and *Khengarpur,* about 6 miles to the south-west of Lakhpat in Kutch, all with the Red Polished Ware.

The superintendent of Archaeology in Saurashtra discovered the Red Polished Ware at *Talala*, *Divrana*, *Kadvar*, *Khalej* and *Una* in Sorath District.

ANCIENT SITE NEAR SOPARA.- A mound at Gas near Sopara, Taluka Bassein, District Thana, was found by Shri D.B. Chitale. The finds from the site, examined by Drs. P.M. Joshi and H.D. Sankalia, included microliths and pottery, the latter being assignable to early historical times.

EARLY HISTORICAL SITES IN SOUTH-EASTERN INDIA.- Shri B.K. Thapar reports the discovery of the following sites. Sasankota in Anantapur District yielded the russet-coloured painted pottery of the early centuries A.D., fragments of beaked rims in characteristic fabric and the megalithic Black-and-red Ware. The finds from Ghantasala in Krishna District, probably representing the Contacossyla of Ptolemy, included the Black-and-red Ware and some fragments of the beaked dish. Previous collection from the site contained two Roman coins (not reported so far) and a number of Satavahana coins. An early Buddhist site at the top of a low hill overlooking the river Gostani, in Visakhapatnam District, was located at *Jami*. An ancient mound, going back to the early centuries A.D., was found near *Gunanupuram* in Srikakulam District.

In the neighbouring village of *Markandaputta* some pillars of a Buddhist monastery were also discovered.

EARLY MEDIEVAL SCULPTURES IN MADRAS.—Shri P. R. Srinivasan discovered a number of bas-reliefs in panels of 10 in. x 6 in., dating from about A.D. 900 and representing scenes from the *Ramayana,* the *Bhagavata* and the *Devimahatmya,* in the Siva and Vishnu temples at *Kandiyur* and in the Siva temple at *Tiruppunturutti.* He also found a sculpture of Nishumbhasudani (pl. LXXIII C), ascribable to the ninth century, in the Ugramahali temple in a suburb of *Tanjore.* It may be recalled that according to the Tiruvalangadu copper-plate Vijayalaya Chola (accession *circa* 850), the first king of the imperial Chola dynasty established a temple-of Nishumbhasudani at Tanjore soon after his conquest of the town.

MEDIEVAL TEMPLES IN MYSORE.—Dr. M. Seshadri reports the discovery of the following temples: Lakshmi-Narasimha temple at *Arakere,* a *trikutachala* of about the thirteenth century, built in the Hoysala style of architecture, with a row of sculptures on the outer wall, beautiful Venugopala, Lakshmi-Narasimha and Kesava images in the three shrines (cells) and well-worked ceilings; Narasimha temple at *Narasipura* in Belur Taluk, built during the reign of the Hoysala king Narasimha I and dedicated to the god Yoganarasimha, a few of its ceilings, the doorway of the goddess-shrine and the main image of Yoganarasimha being some of the best examples of the Hoysala style; Bhairava temple at *Bhairavanagudda* in Belur Taluk, of an ordinary type with plain walls and plain stepped-pyramidal tower on the *garbhagriha* but with some exquisite sculptures; Mallinatha temple at *Kyathanahalli* in Heggadadevanakote Taluk, going back to the early twelfth century and having a *garbha-griha, sukhanasi* and *navaranga* of very small dimensions with all early characteristics—right-angled pilasters on the outer walls, stepped-pyramidal tower with a stone *kalasa* above and pillars of slender and short double-vase type in the *navaranga;* temple at *Ballesvara* in Honnali Taluk, a *trikutachala* with three *garbha-grihas,* three *sukhanasis* and a common *navaranga* open in the front and porch, the lathe-turned and star-shaped pillars in the *navaranga,* beautifully-worked ceilings and elaborately-carved doorways being all typically Hoysala; and Siddhesvara temple at *Belagutti* in Honnali Taluk, again a *trikutachala,* with a high stepped-pyramidal tower on each *garbha-griha,* the steps haying upward dentil-mouldings at close intervals, a beautiful Uma-Mahesvara image in a niche in the *navaranga,* elegantly-worked ceilings, pillars and beams and a number of hero-stones and inscriptions standing all round the monument and giving the history of the Sindas who ruled those parts in the eleventh and twelfth centuries. At *Byadamalalu* in Chamarajanagar Taluk were also discovered a few stray sculptures lying in a heap on a mound, among which was a rare figure of Ravana, 3 ft. high, standing with all his ten heads and twenty hands in a marching attitude.

MEDIEVAL TEMPLE OF VITHOBA (?) IN AHMADNAGAR DISTRICT.—An eleventh-twelfth century temple, built during the Yadava period, was found by Dr. H. D. Sankalia at *Ram Doh* near Kalegaon in District Ahmadnagar, on a high rock overlooking the Godavari. A headless stone image of Vithoba, about 3 ft. high, was found in the debris.

JAINA TEMPLE IN HYDERABAD.—Dr. P. Sreenivasachar informs that a Jaina temple and twentyfour Jaina images were discovered at *Charthana,* District Parbhani, in the course of a small-scale digging.

MEDIEVAL TEMPLE NEAR BHARHUT.—Shri S. K. Dikshit located a temple of the Khajuraho style on a hill near the fortress of *Naro Pahad,* not very far from Bharhut.

TEMPLES AND SCULPTURES IN RAJASTHAN.—Dr. S. P. Srivastava reports the following discoveries: a temple of Lakulisa with an inscription of A.D. 971 in a niche at *Eklingji;* some beautiful Jaina images of the twelfth century at *Arian;* sculptures of the Gupta period at *Bayana* and *Kama',* two images of Siva and Parvati and a Jaina image of Parsvanatha of the Vikrama year 1250 (A.D. 1193) in the *Bharatpur* region; and nine bronze Jaina images of early medieval period at *Singoli* (Bigod), District Bhilwara, the deities including Parsvanatha, Ambika, Mahishasuramardini, etc., most of them with inscriptions.

MEDIEVAL SCULPTURES FROM BIHAR.—A number of sculptures of Pala age were collected by the Jayaswal Research Institute from *Uchaitha* in Darbhanga District.

PAINTINGS IN KUTCH.—Mural paintings in the old Kutch Kamagar style were discovered on the walls of a *dela* at *Rayon,* depicting events about the Kanfatas, a religious sect which flourished in Kutch and subsequently spread all over Gujarat, Saurashtra and Rajasthan.

PAINTINGS IN RAJASTHAN.—Dr. S. P. Srivastava reports the discovery of wall-painting of the early seventeenth century in a *chhatri* on *Bhaupur* (Jaipur) and of Raga-Ragini paintings of the eighteenth century in Mughul style in the Diwan-khana of the Thakur Sahib of *Bhandarej.*

## 11. PUBLICATIONS

### A. DEPARTMENTAL PUBLICATIONS

The following were the publications of the Department of Archaeology.

ANCIENT INDIA.—NO. 9 (1953), a Special Number to commemorate the Jubilee of the Archaeological Survey of India, and nos. 10-11 (1954 and 1955) were published. No. 12 (1956) will be available by September 1956.

MEMOIRS OF THE ARCHAEOLOGICAL SURVEY OF INDIA.—No. 72, *Inscriptions of Chamba*, by B. Ch. Chhabra, is in the final stage of printing. The next nos., *The Great Temple at Tanjore* by T. N. Ramachandran and *Excavation at Kausambi* by G. R. Sharma, are in different stages of publication.

GUIDE-BOOKS.—*Guide to Sanchi* by John Marshall and *Rajgir* by M. H. Kuraishi and A. Ghosh were reprinted. *Agra Fort* by M. A. Husain is in the final printing stage. A new publication in the series was *Sarnath* by V. S. Agarwala. *Ajanta* by D. Mitra and *Sravasti* by M. Venkataramayya are in the press.

CORPUS INSCRIPTIONUM INDICARUM.—The long-awaited fourth volume in the series, *Inscriptions of the Chedi-Kalachuri Era* by V. V. Mirashi, was published.

EPIGRAPHIA INDICA.—Parts viii of volume XXVIII, parts iv, y, vi, yii of volume XXIX and parts i and ii of volume XXX were published. Parts iii and iv of the last-mentioned volume were passed for final printing, and material for parts v, vi and vii thereof and for parts, i, ii, iii and iv of volume XXXI are in the press.

EPIGRAPHICA INDICA—ARABIC AND PERSIAN SUPPLEMENT.—The issue for 1951-52 and 1953-54 are in the final stage of printing.

ANNUAL REPORTS ON SOUTH INDIAN EPIGRAPHY.—The Reports for 1943-44 and 1944-45 were published, concluding the series.

ANNUAL REPORTS ON INDIAN EPIGRAPHY.—The Reports for 1947-48 and 1948-49 were published, while those for 1949-50, 1950-51, 1951-52, 1952-53 and 1953-54 were passed on to the press for printing.

SOUTH INDIAN INSCRIPTIONS.—Volume XIV, comprising the inscriptions of the Pandyas, was sent to the press. Material for volumes XV (inscriptions in the Ranganathasvami temple at Srirangam), XVI (Telugu inscriptions of the Vijayanagara dynasty collected between 1904 and 1928), XVII (Kannada inscriptions collected between 1925 and 1931) and XVIII (inscriptions collected in 1904) will be sent to the press in the near future.

PICTURE POSTCARDS.—The sets on Mahabalipuram, Sarnath, Sanchi, Nalanda and Bijapur were reprinted. New sets on Agra, Fatehpur Sikri and Ajanta Paintings (in colour) were printed. The following sets will be shortly available: Amaravati and Nagarjunakonda, Ajanta (monochrome), Aurangabad, Ellora, Chittorgarh, Modhera and Patan, Kanheri and Elephanta, the latter two reprints.

## B. OTHER PUBLICATIONS

BOMBAY.—A monograph on *Akota Bronzes* by U. P. Shah will soon be published.

DECCAN COLLEGE POST-GRADUATE AND RESEARCH INSTITUTE, POONA.—The Institute published the Report on the *Excavations at Nasik and Jorwe* by H. D. Sankalia and S. B. Deo, and jointly with the University of Karnatak, *Pleistocene Studies in the Malaprabha Basin* by R. V. Joshi.

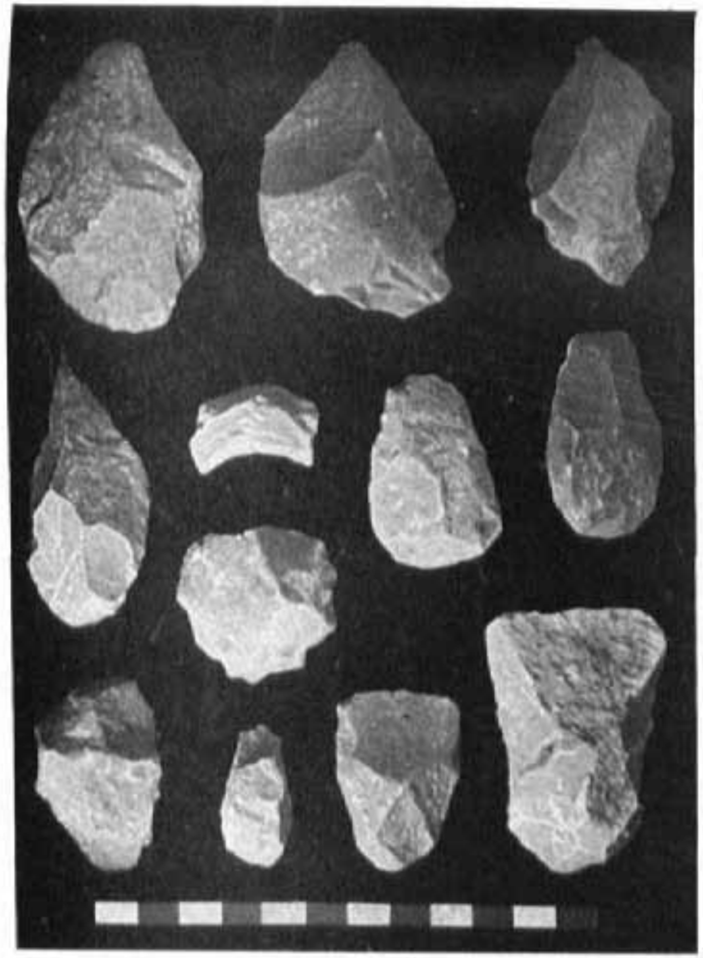
HYDERABAD.—*Guide to Ajanta* (in Hindi) by Shri Ram Sharma was published. The following are in the press: *Neurgaon Inscriptions* by P. Sreenivasachar, *Corpus of Inscriptions in the Kannada Districts of Hyderabad State* by P. Desai, *Corpus of Inscriptions in the Telangana Districts*, part iii, by P. Sreenivasachar, *Asokan Edict at Maski* by D. C. Sircar and *Bulletin of the Hyderabad Archaeological Department for 1951*.

MYSORE.—*Epigraphia Carnatica*, volume XVI, Tumkur Supplement, was published. The printing of *Epigraphica Carnatica,* Kolar Supplement, made good progress. Material for *Annual Reports for 1947-55* was made ready and the reprinting of several *guide books* taken in hand.

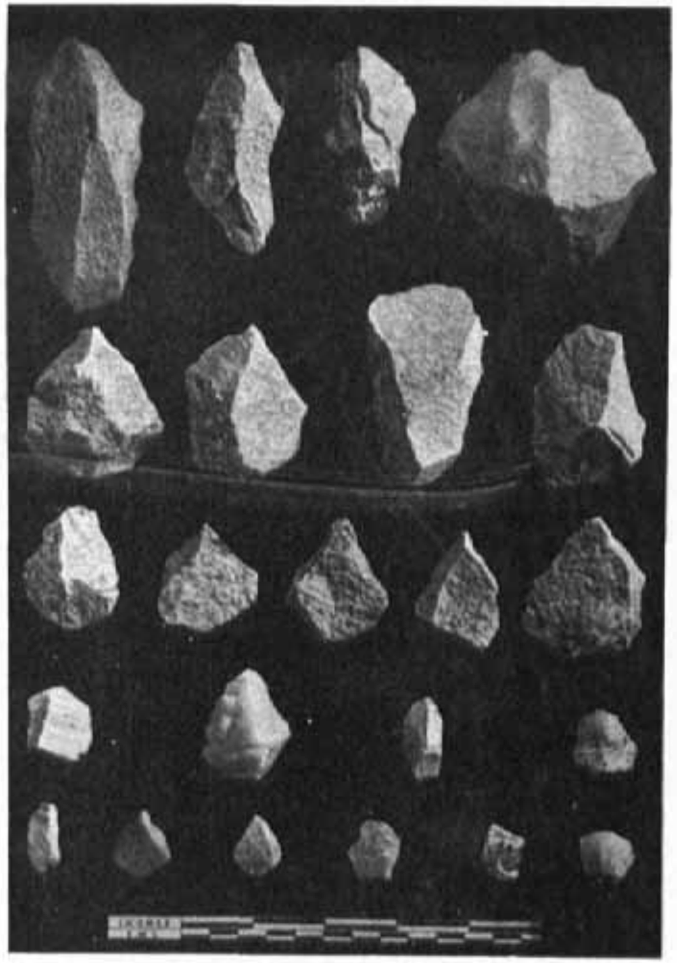
RAJASTHAN.—Booklets on *Jaipur Brassware* and *Rajasthan's Contribution to Buddhism* were published.

SAURASHTRA.—A booklet on Buddhist monuments in Suarashtra was published.

PLATE I



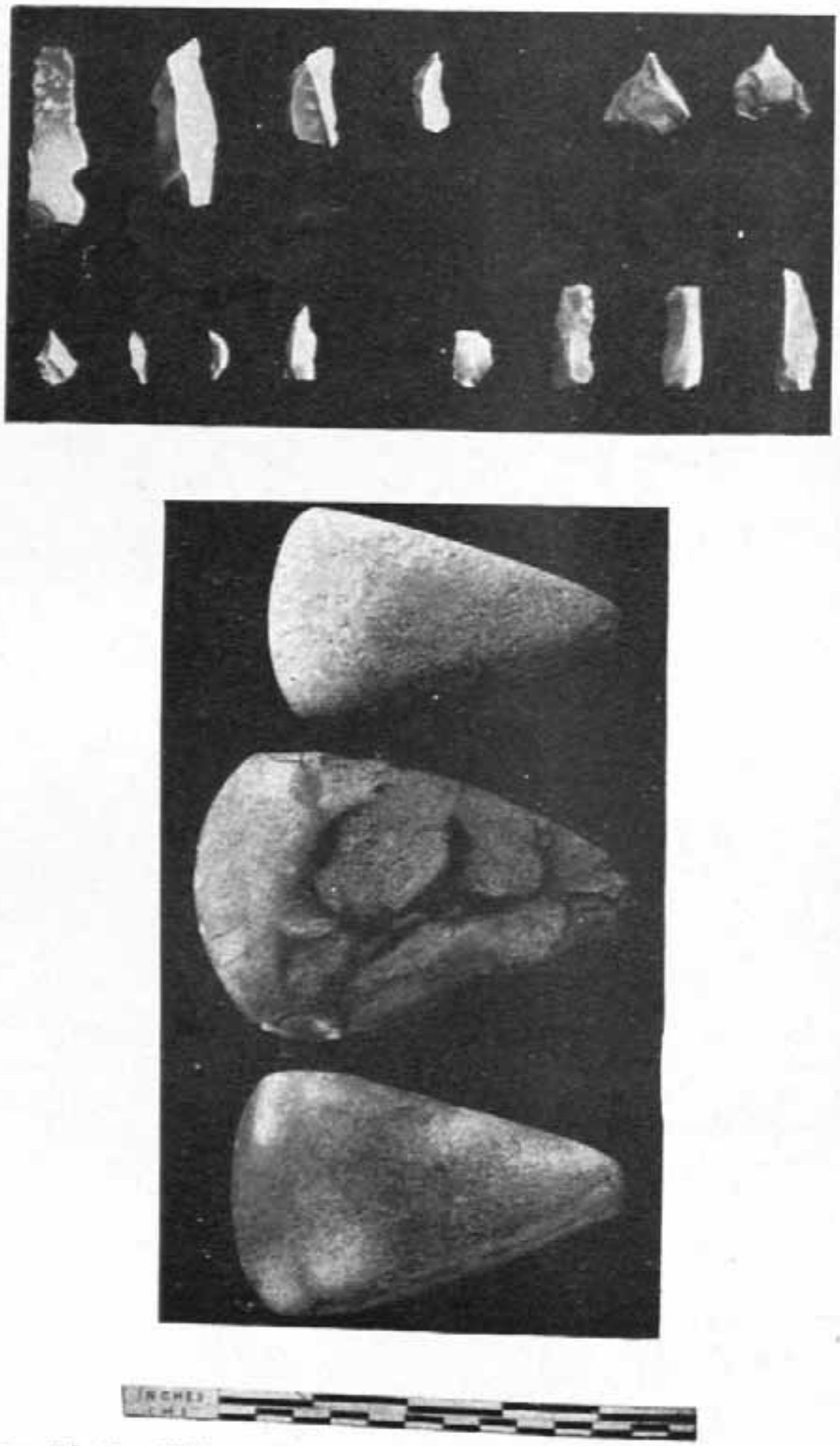
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B

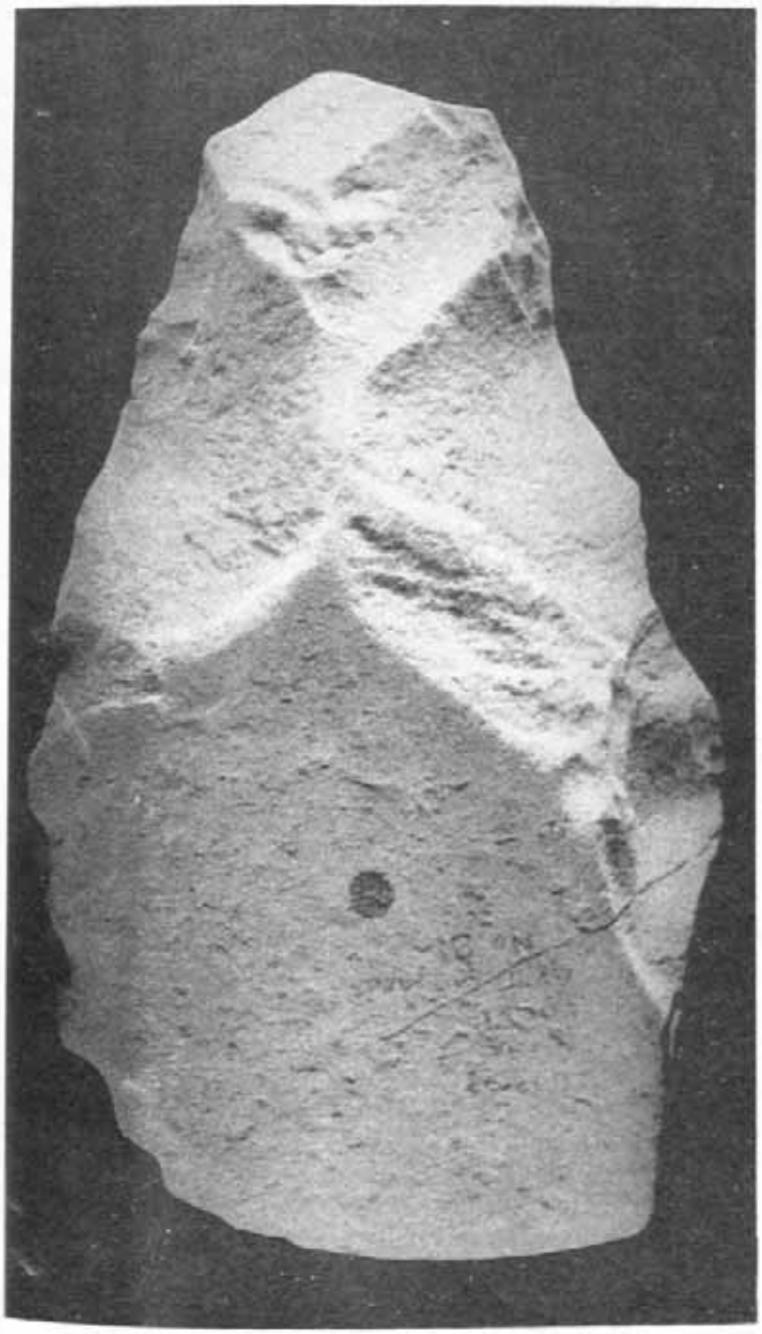
*Stone implements from Bariyari:* A, *Lower Palaeolithic;* B, *Upper Palaeolithic.* *See page 4*

PLATE II



Top, *microliths from Siddapura;* bottom, *stone axes from Khoh and Agarhunda.* *See page 4*

PLATE III





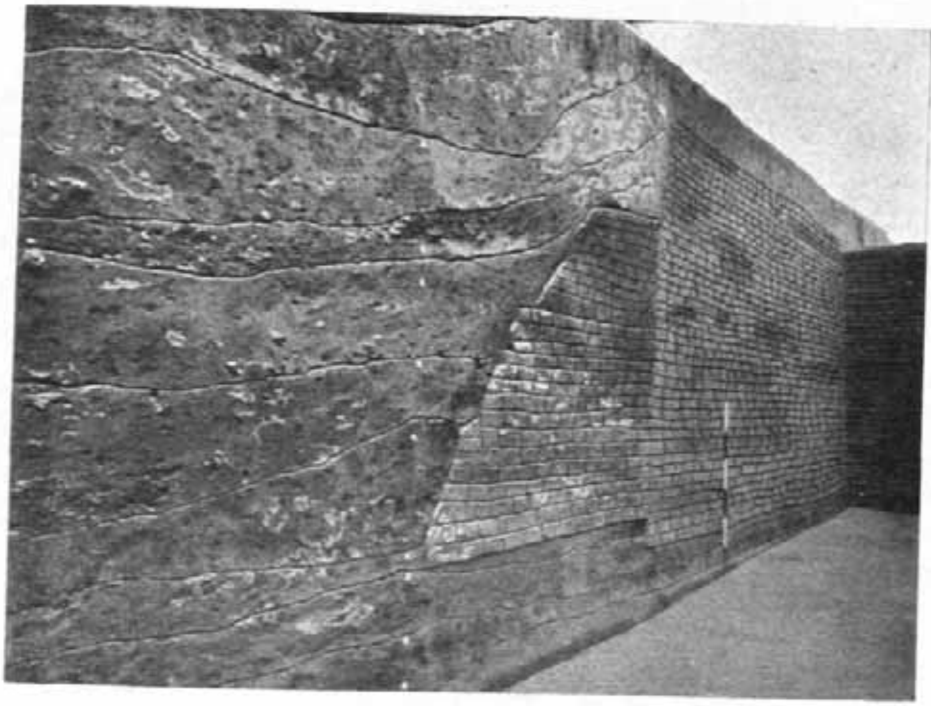
*Stone implements of Series I from Nevasa.* [illegible]. *See page 5*

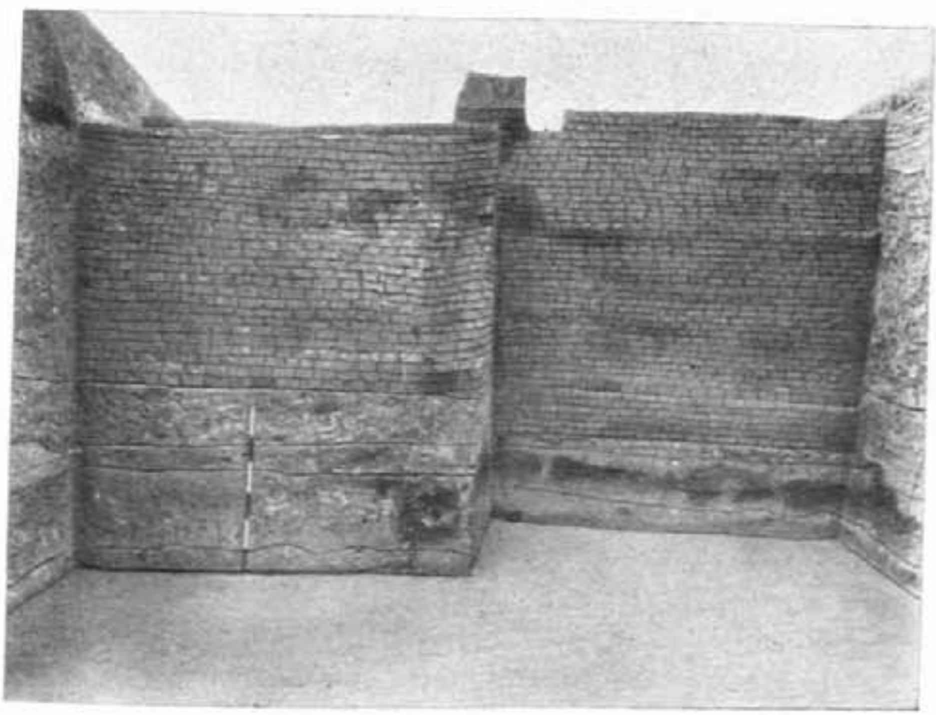
PLATE IV



*Stone implements of Series II from Kalegaon.* $\frac{1}{1}$. *See page 5*

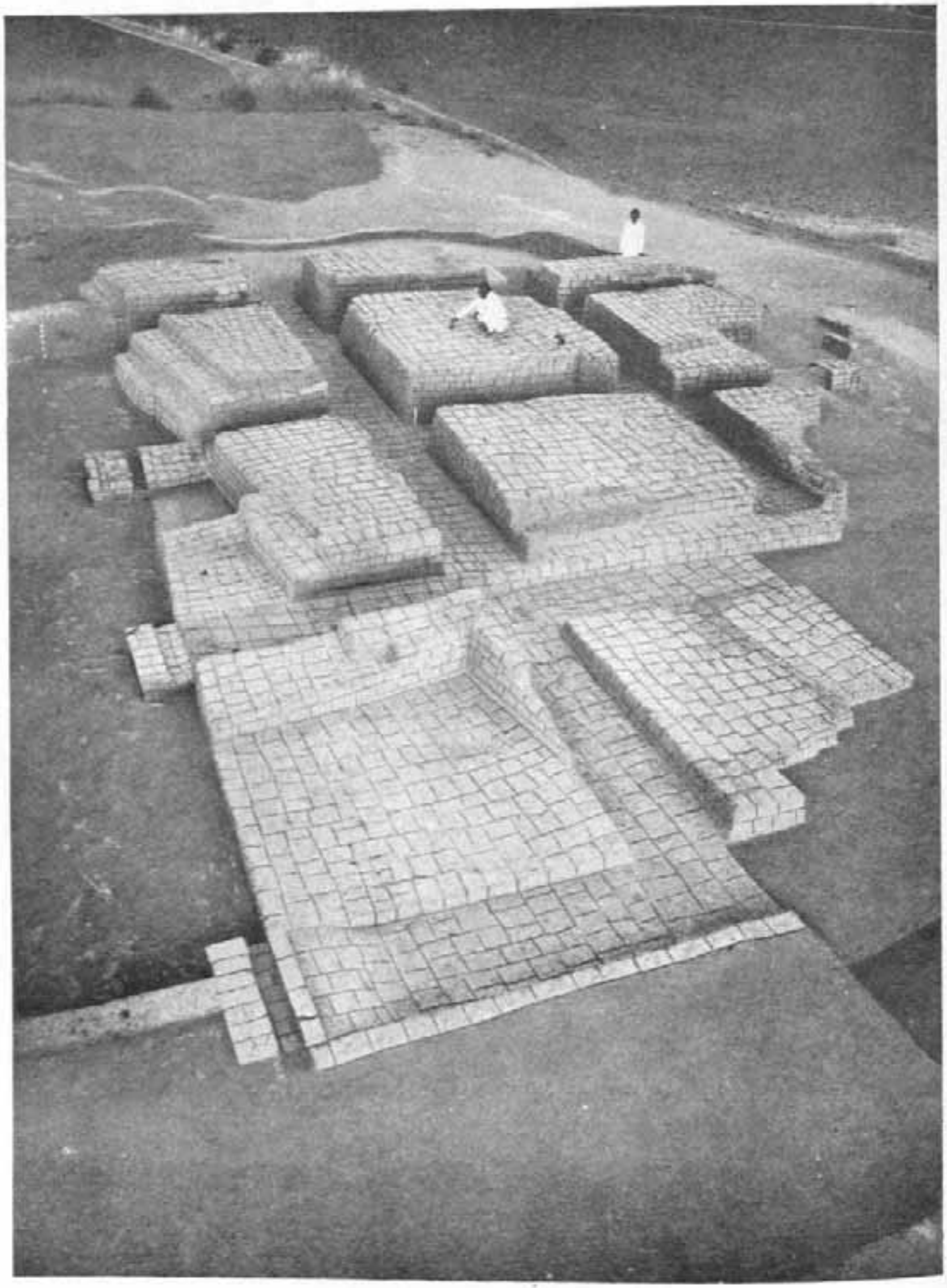
PLATE V





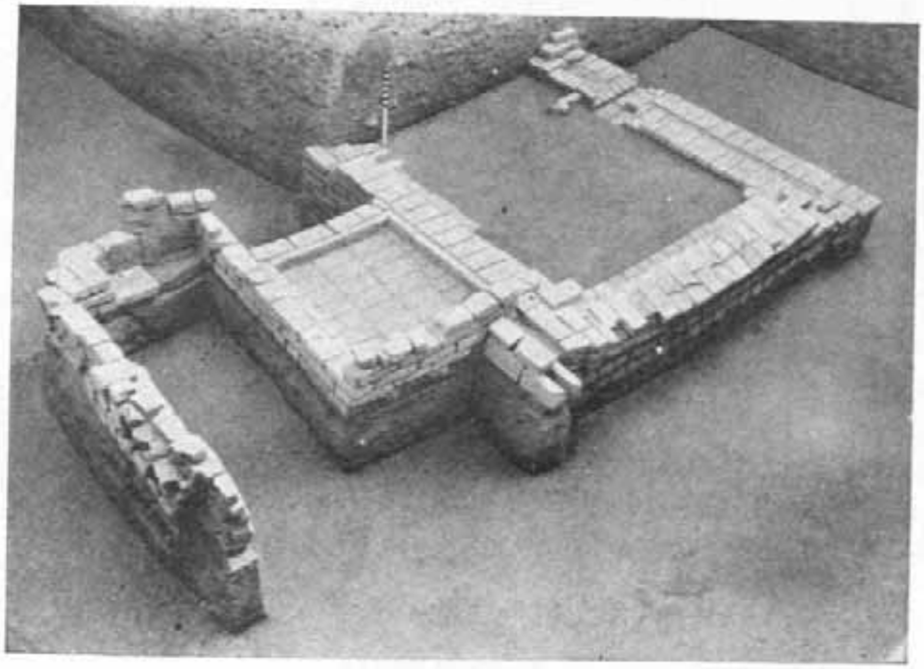
*Lothal: mud-brick rampart, platform, revetment and buttress-wall.* *See page 6*

PLATE VI

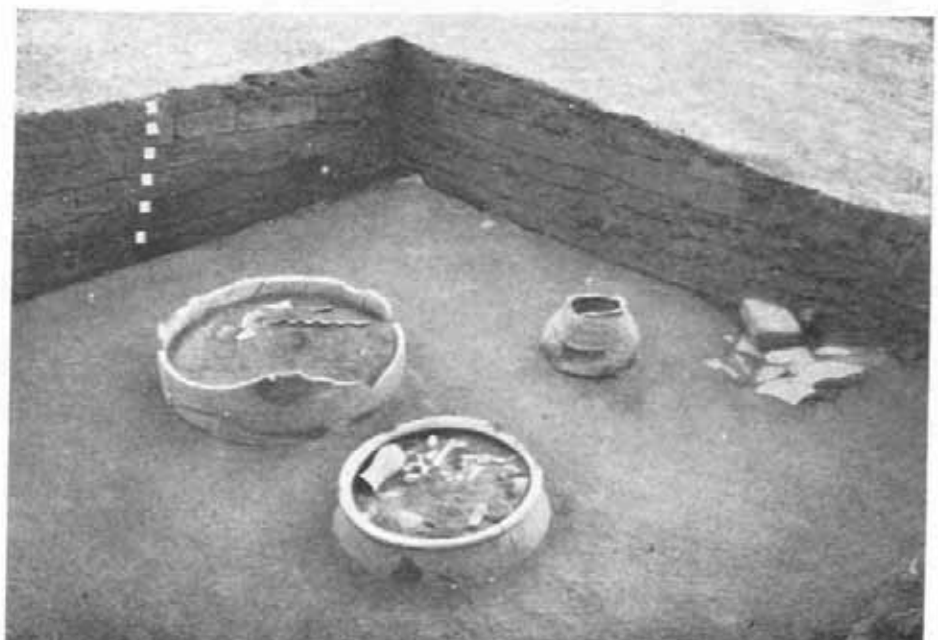


*Lothal: mud-brick structure with solid rectangular blocks and channels in between, probably a kiln.*
*See page 6*

PLATE VII



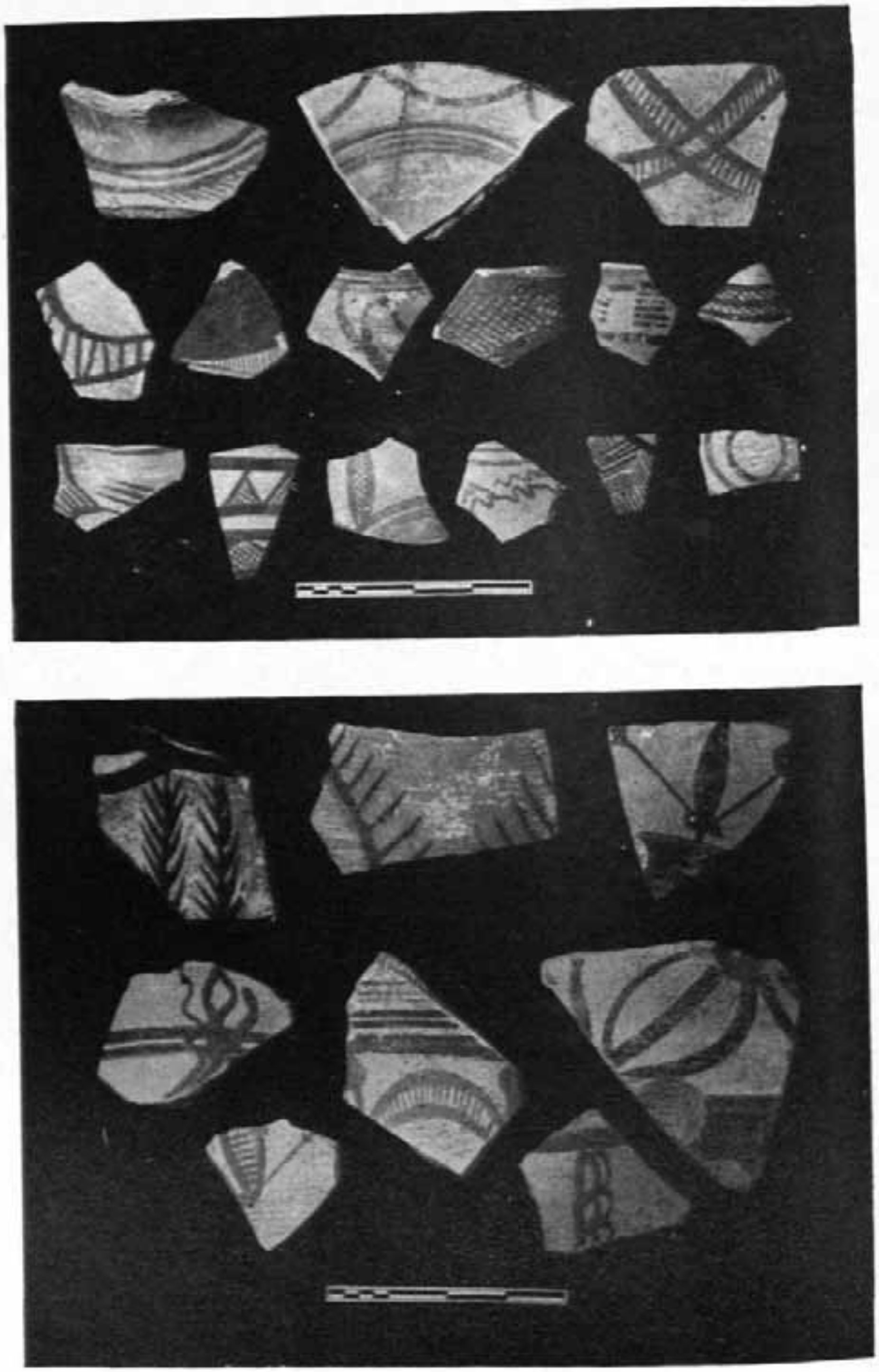
A



B

*Lothal:* A, *part of a house;* B, *urn-burials (?).* *See page 6*

PLATE VIII



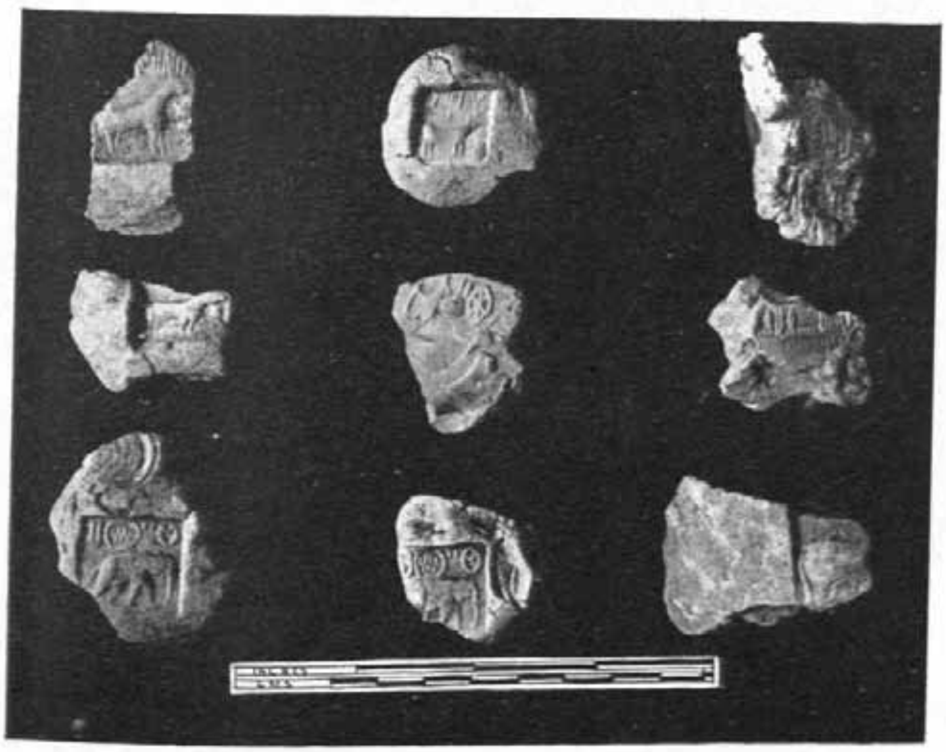
*Lothal: painted pottery.* *See page 6*



A



B



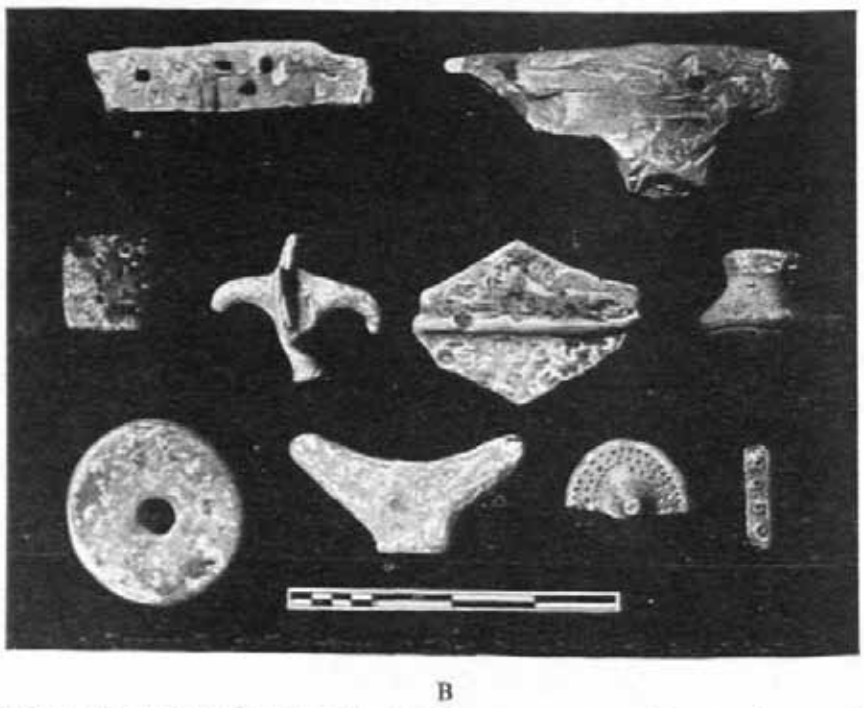
C

*Lothal:* A *and* B, *steatite seals,* $\frac{3}{1}$*;* C, *terracotta sealings.* *See page 7*

PLATE X



A

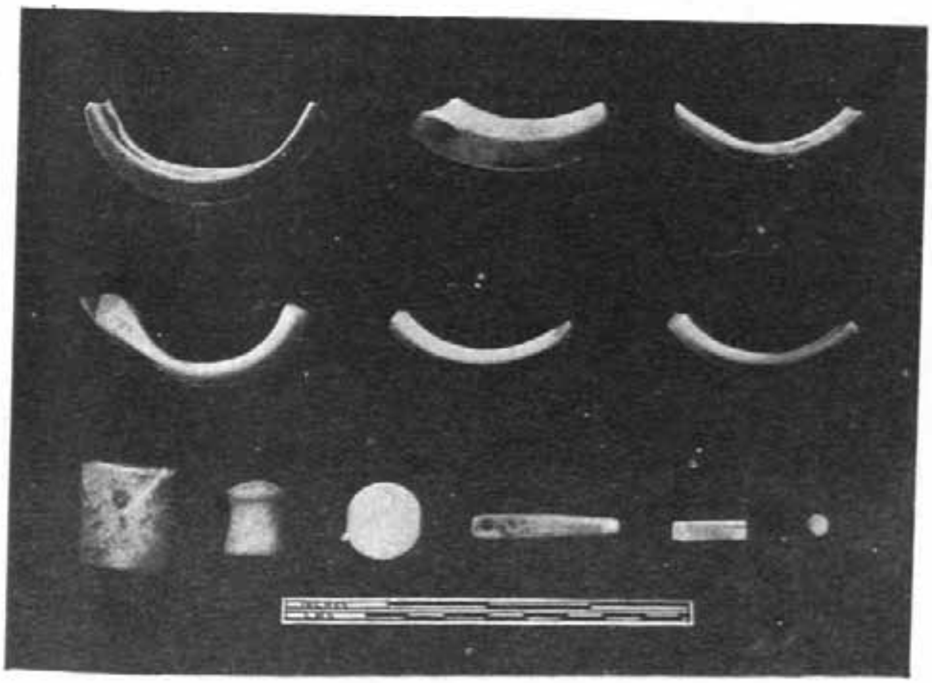


B

*Lothal: A, terracotta figurines; B, miscellaneous terracotta objects.* *See page 7*



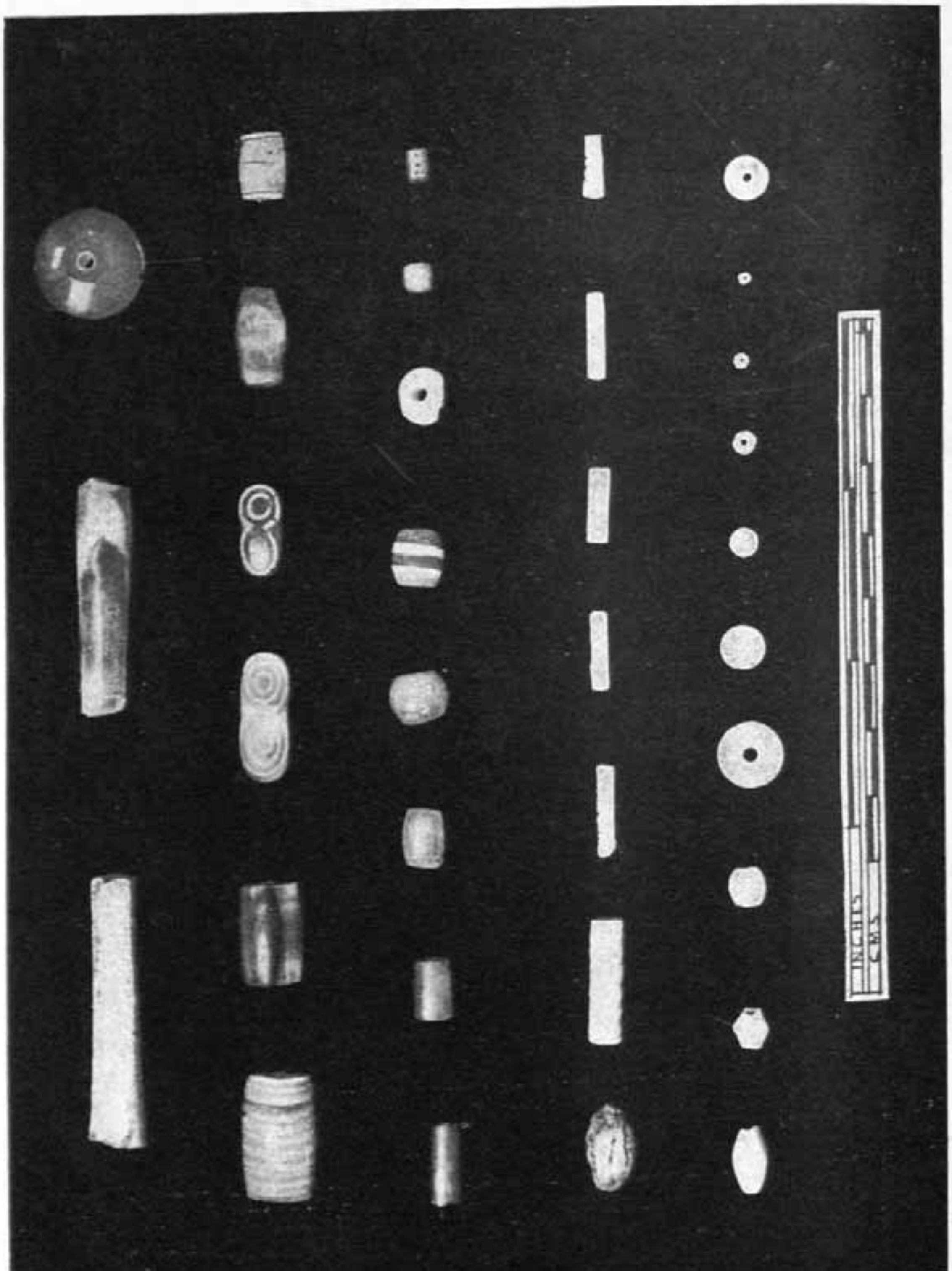
A



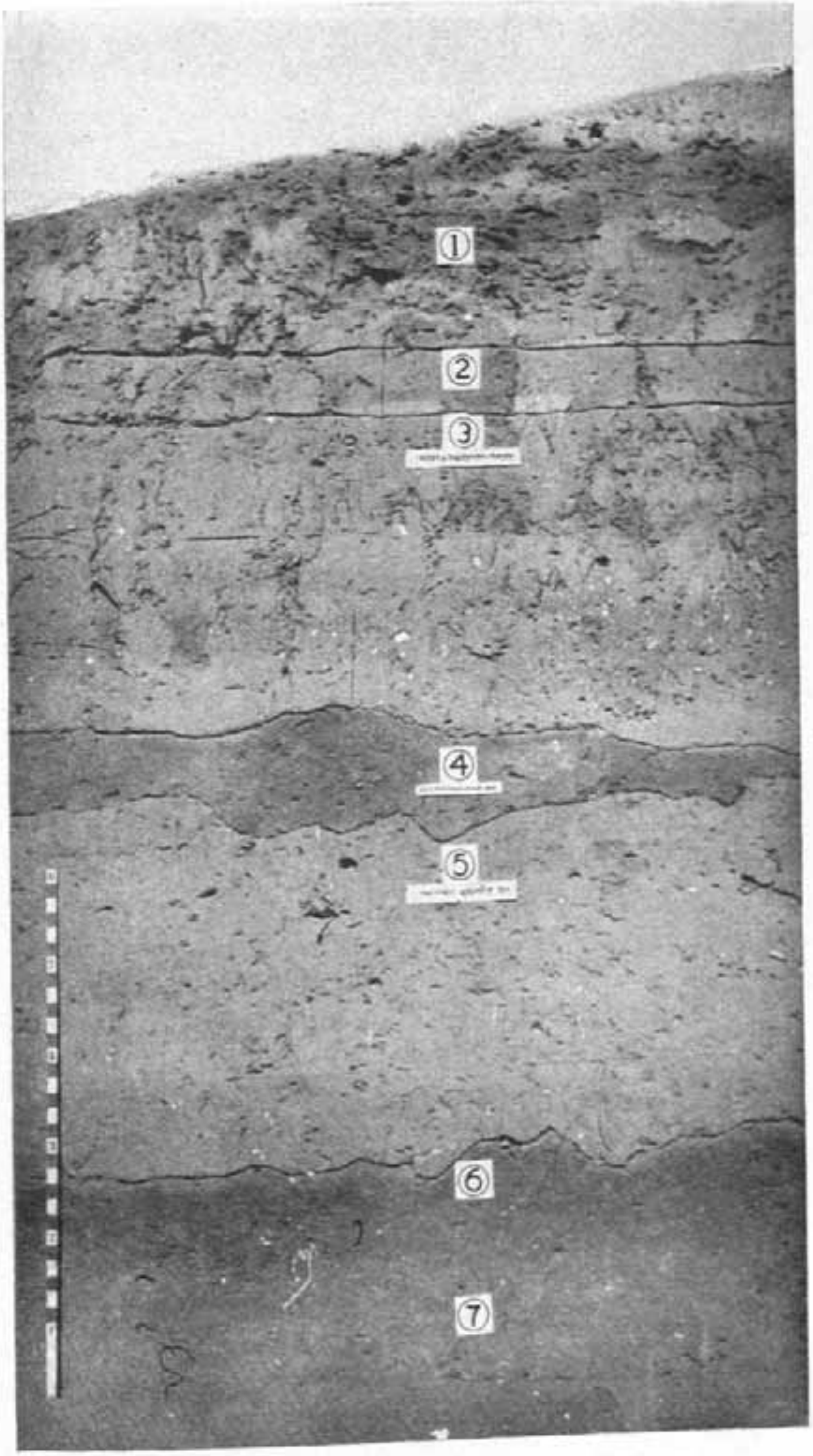
B

Lothal: A, copper vessel; B, shell bangles and other objects. See page 7

PLATE XII

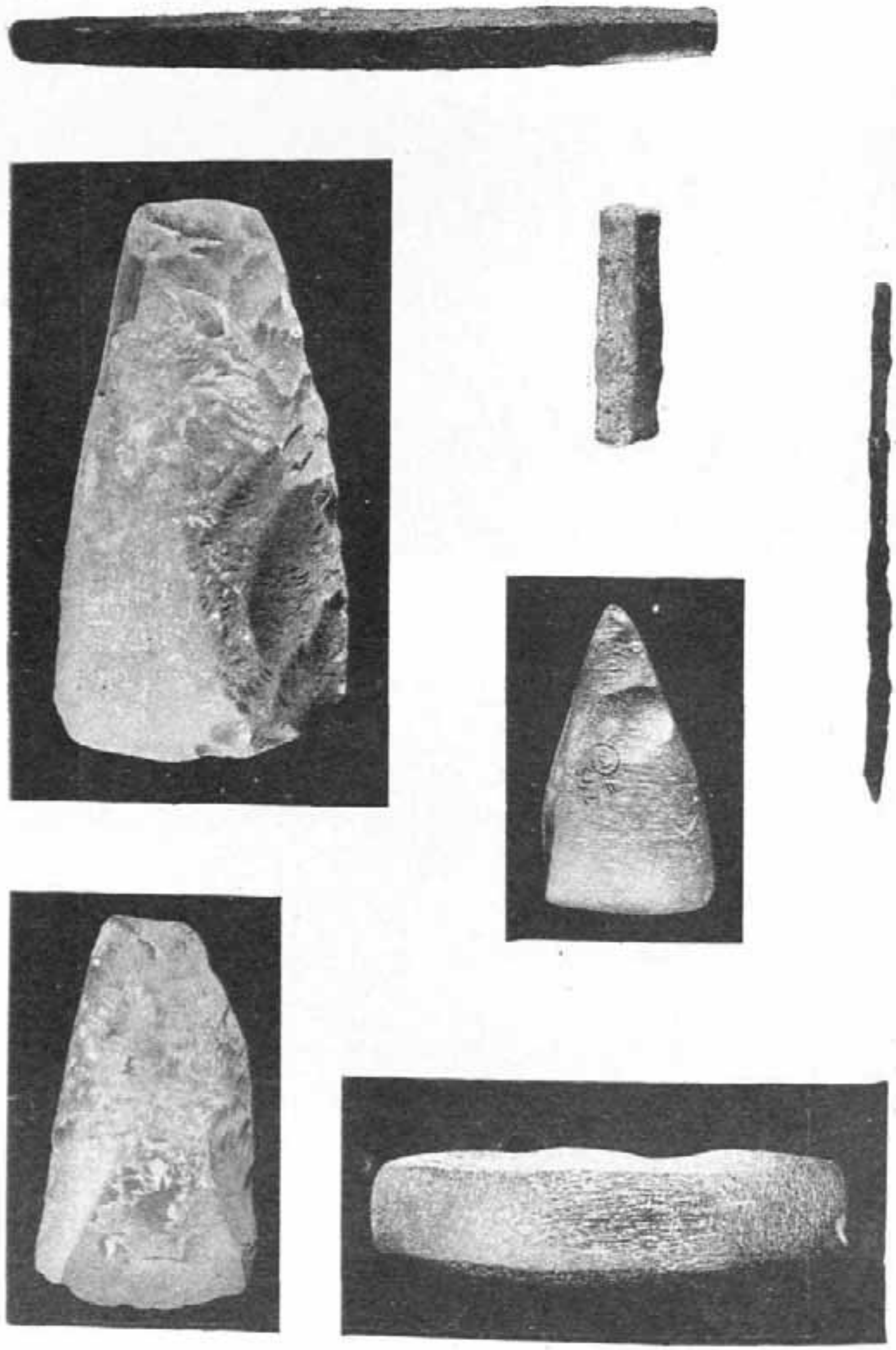


*Lothal: stone beads.* *See page 7*



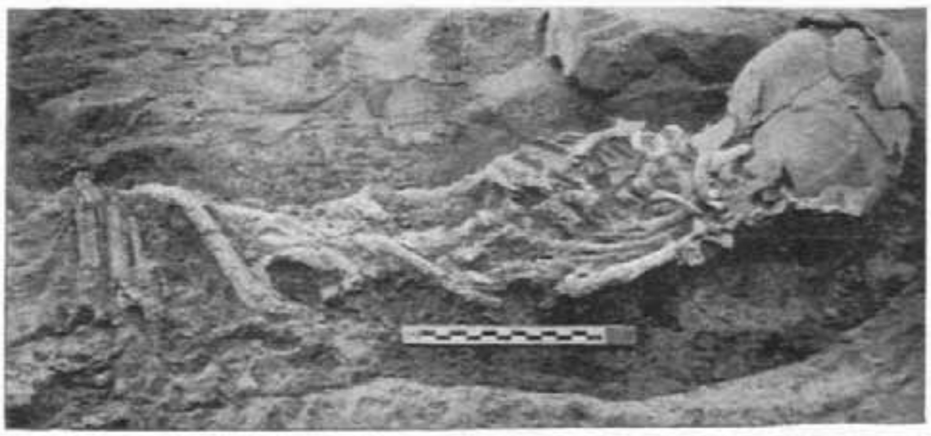

Nevasa: section of a trench. See page 8

PLATE XIV



*Nevasa: stone celts and copper objects, Period III (neolithic-chalcolithic).* 4/5. *See page 8*

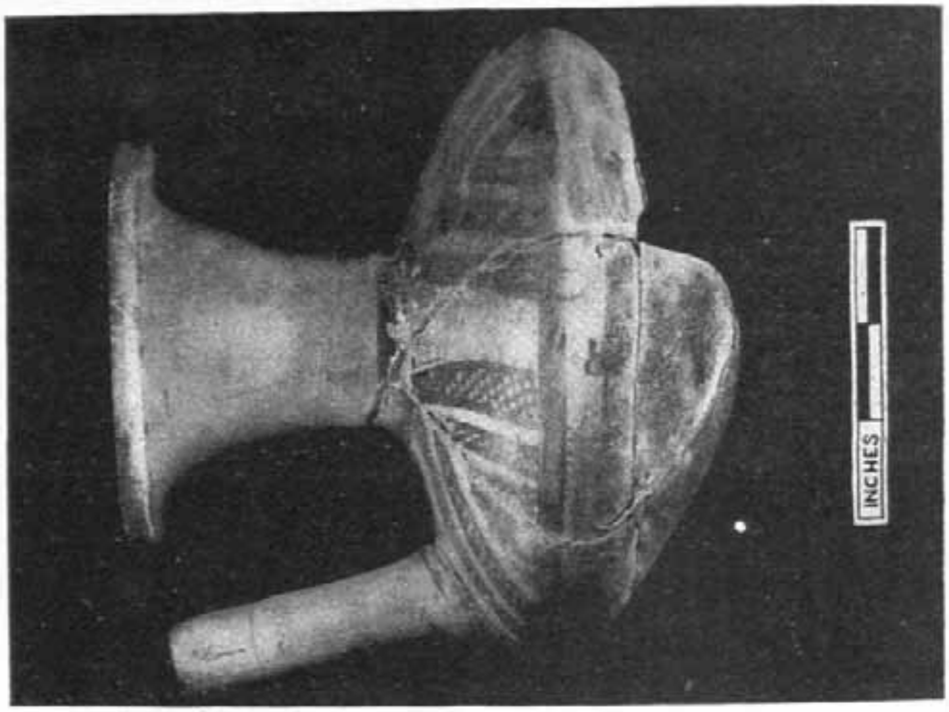


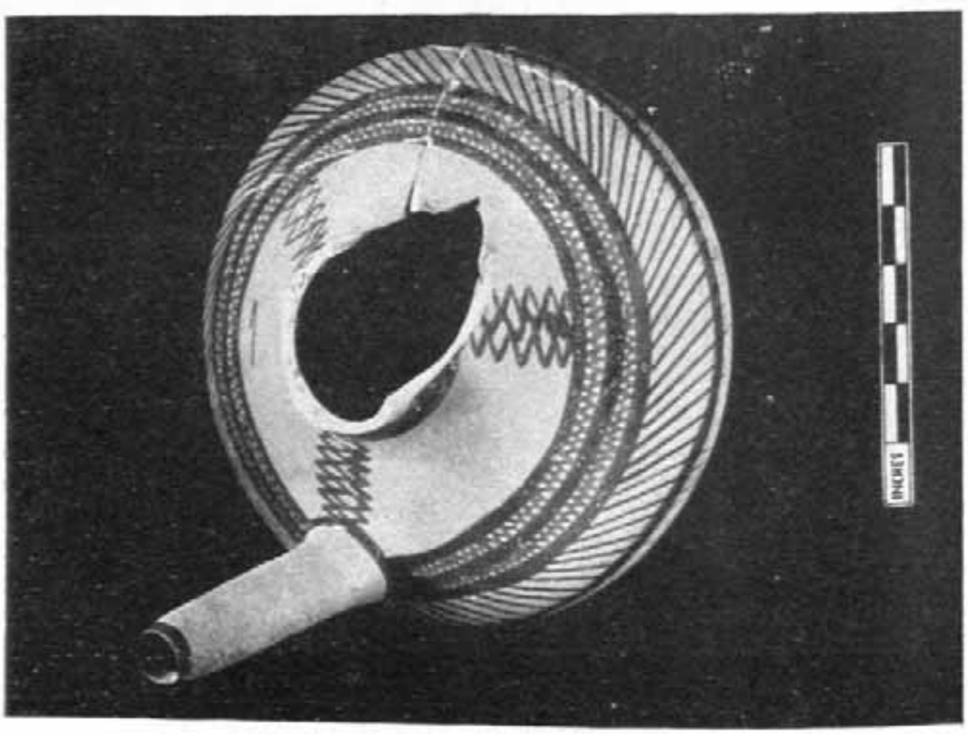





*Nevasa: types of burials of Period I (neolithic-chalcolithic).* *See page 8*

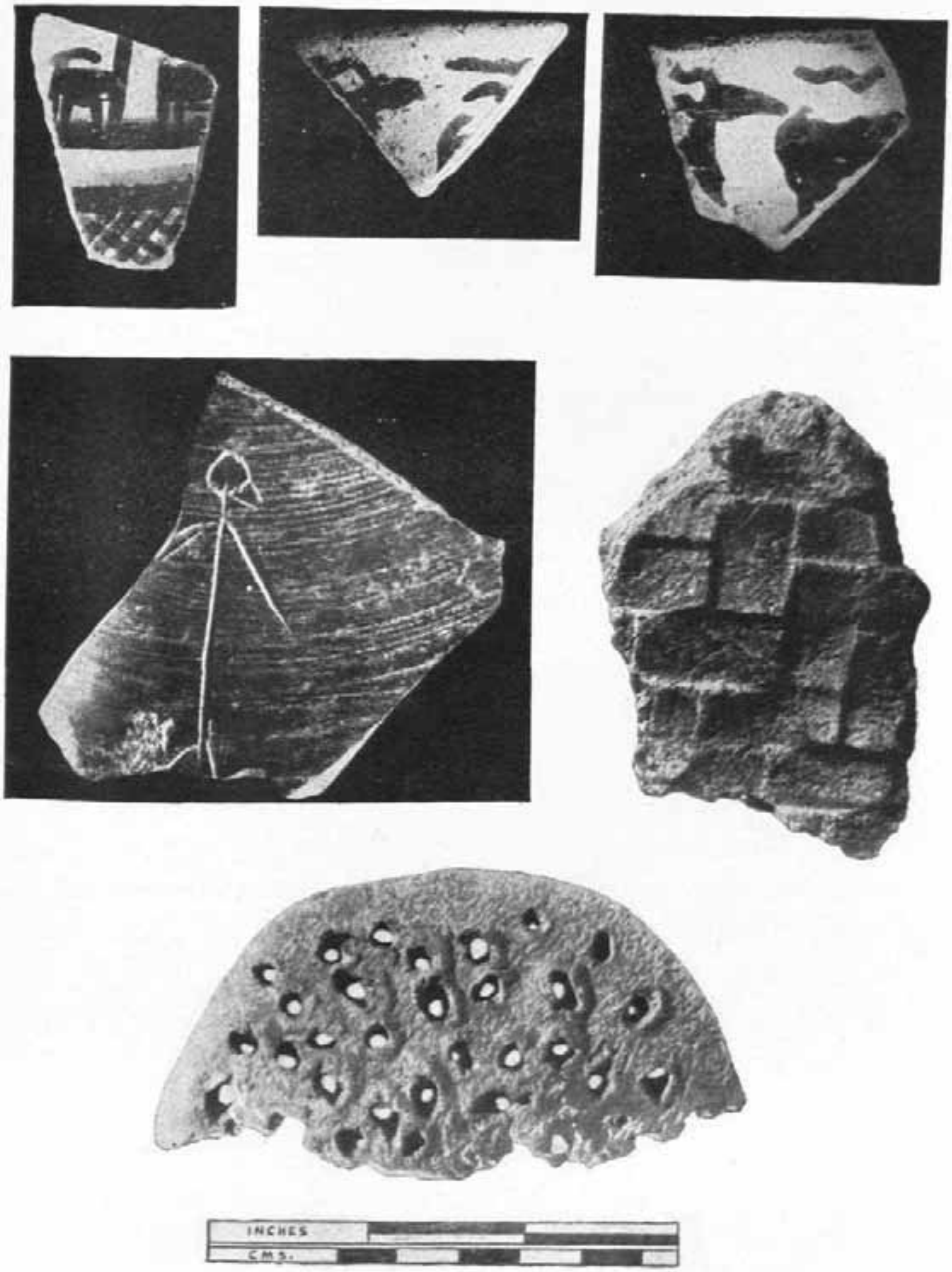
PLATE XVI




*Nevasa: painted vessels, Period III (neolithic-chalcolithic).* *See page 8*

PLATE XVII




*Nevasa: miscellaneous sherds, Period III (neolithic-chalcolithic)* *See page 8*

# PLATE XVIII

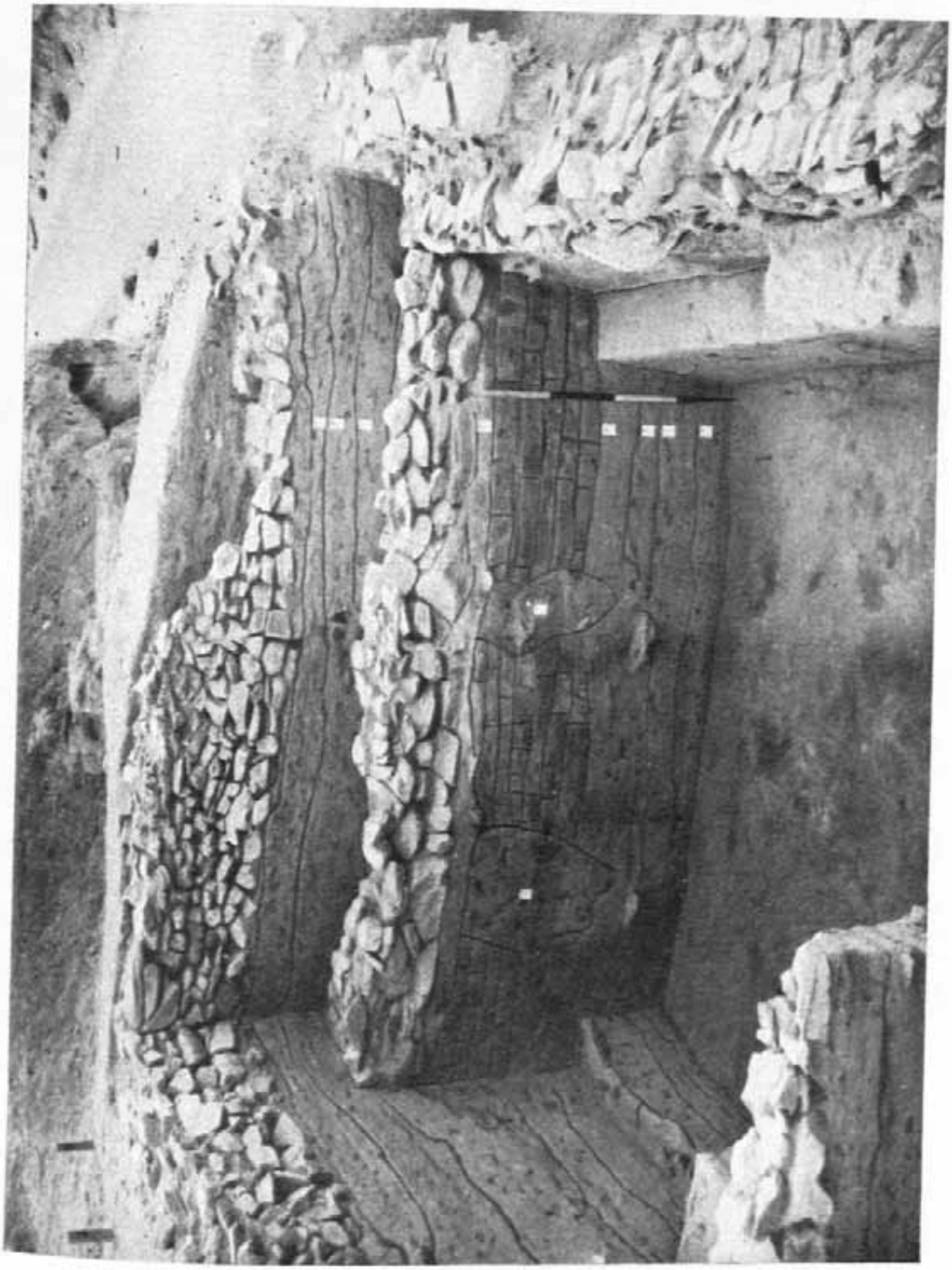


A



B

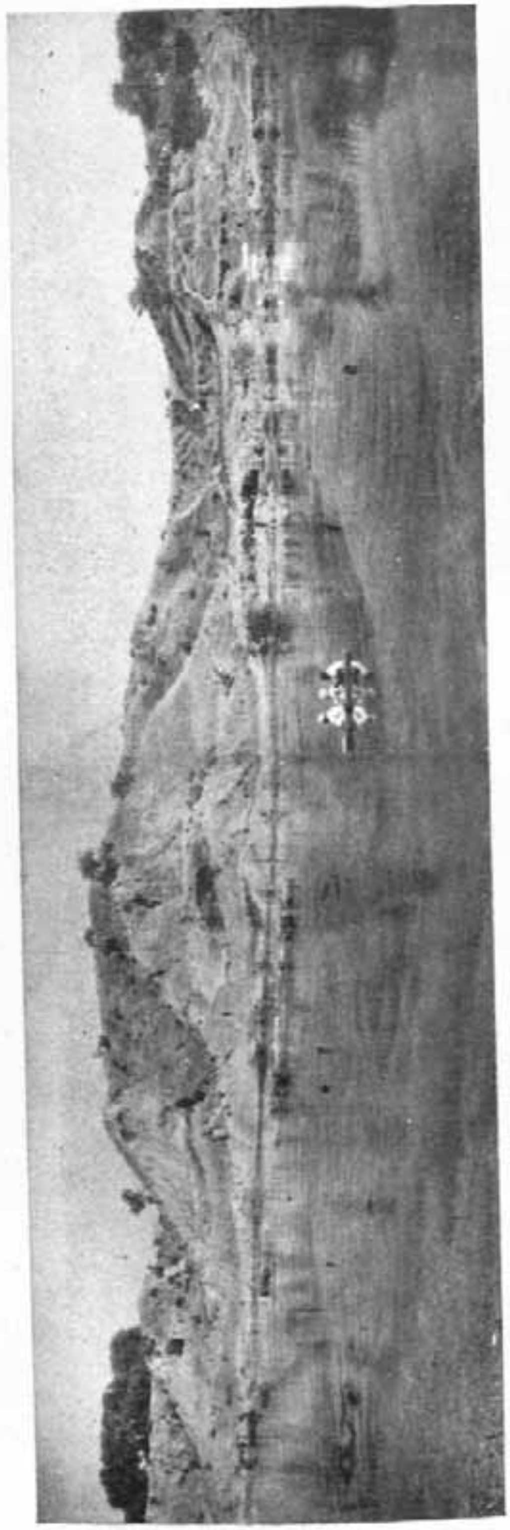
*Nevasa:* A, *Megaron ware, Period IV,* $\frac{1}{1}$; B, *rotary quern, Period V.* *See pages 10 and 11*



*Ahar*: *structures of Period I* (*chalcolithic*). *See page 11*

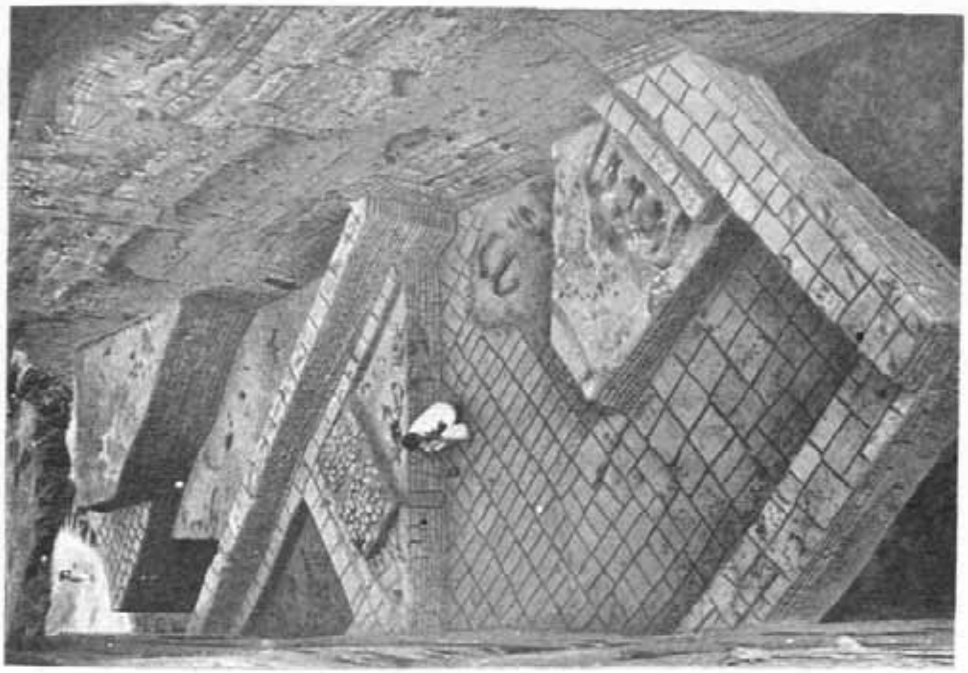


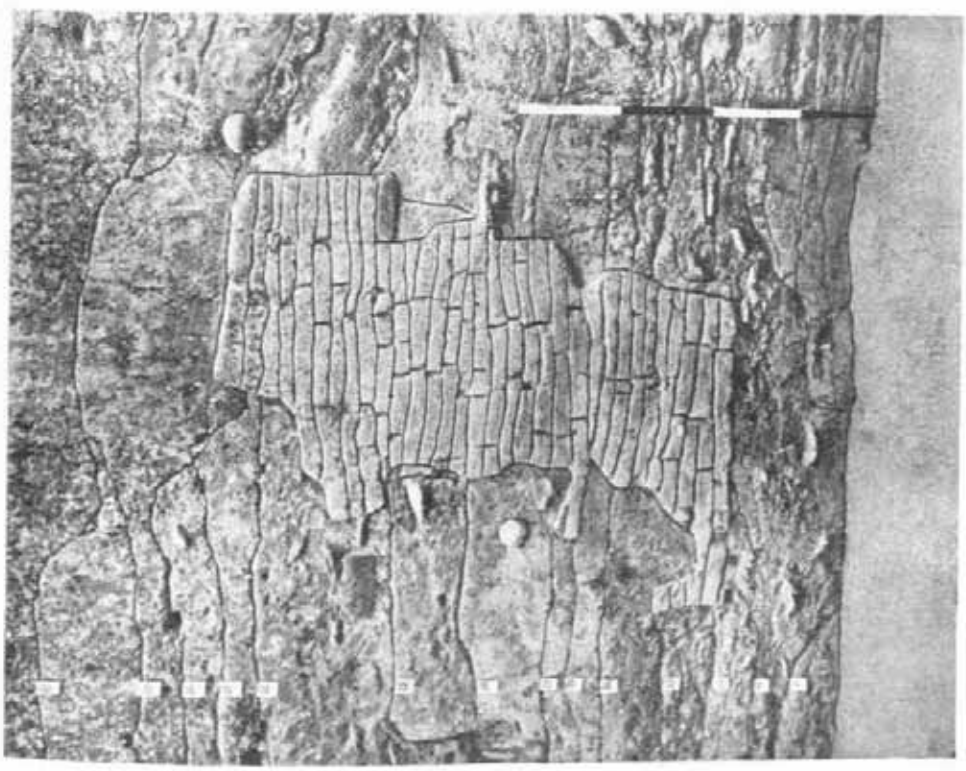
A. *Nagda: general view of mound, from south.* *See page 14*



B. *Ujjain: general view of Garh Kalika mound.* *See page 19*

PLATE XXI





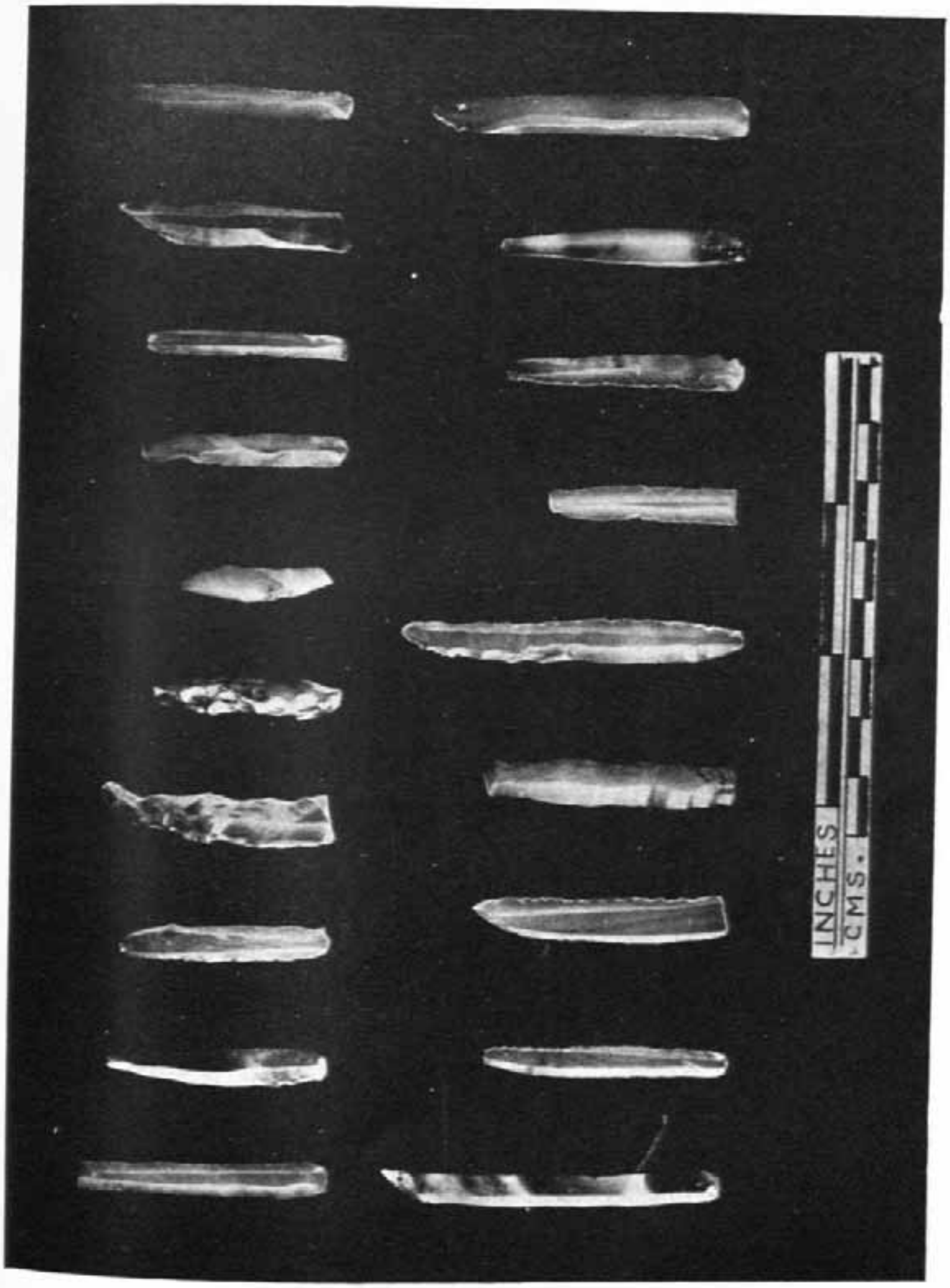
*Nagda: structures of Period I (chalcolithic).* *See page 14*





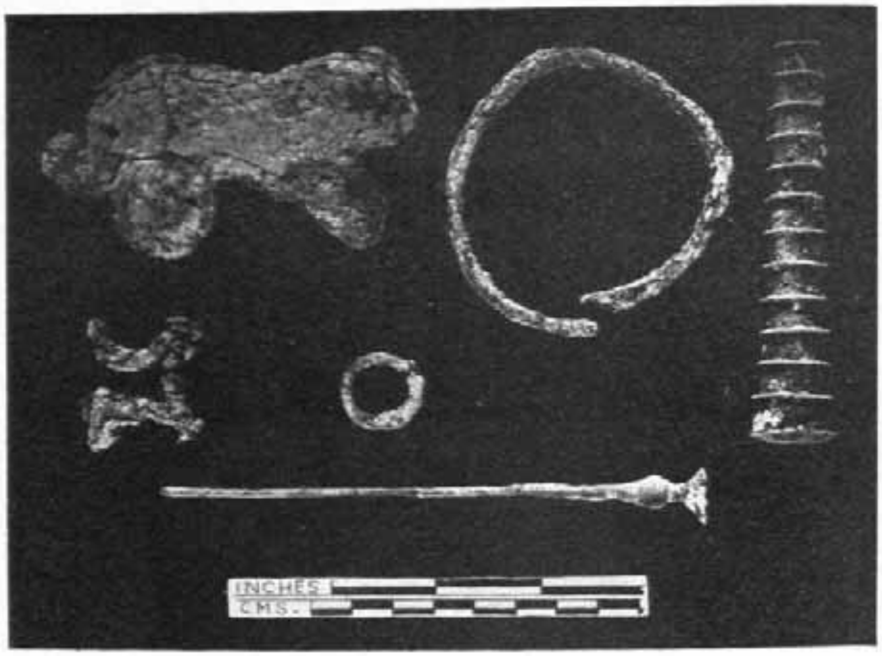


*Nagda: painted sherds, Period I (chalcolithic).* *See page 14*

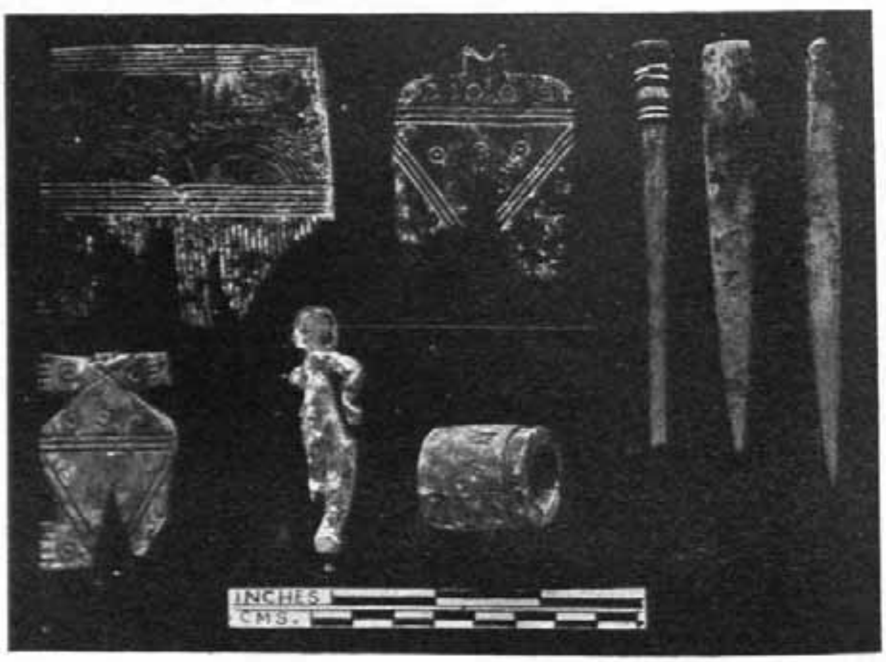



*Nagda: microliths, Period I (chalcolithic).* *See page 14*

PLATE XXIV

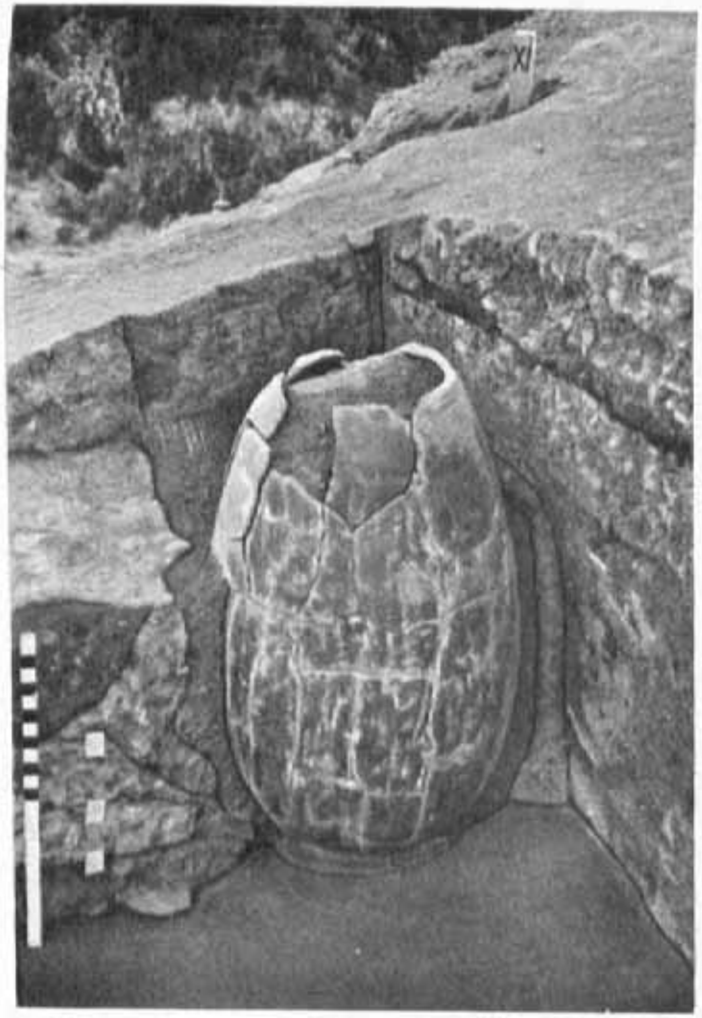



A




B

*Nagdā: objects from Period III. A, copper, and B, ivory and bone.* *See page 14*




A



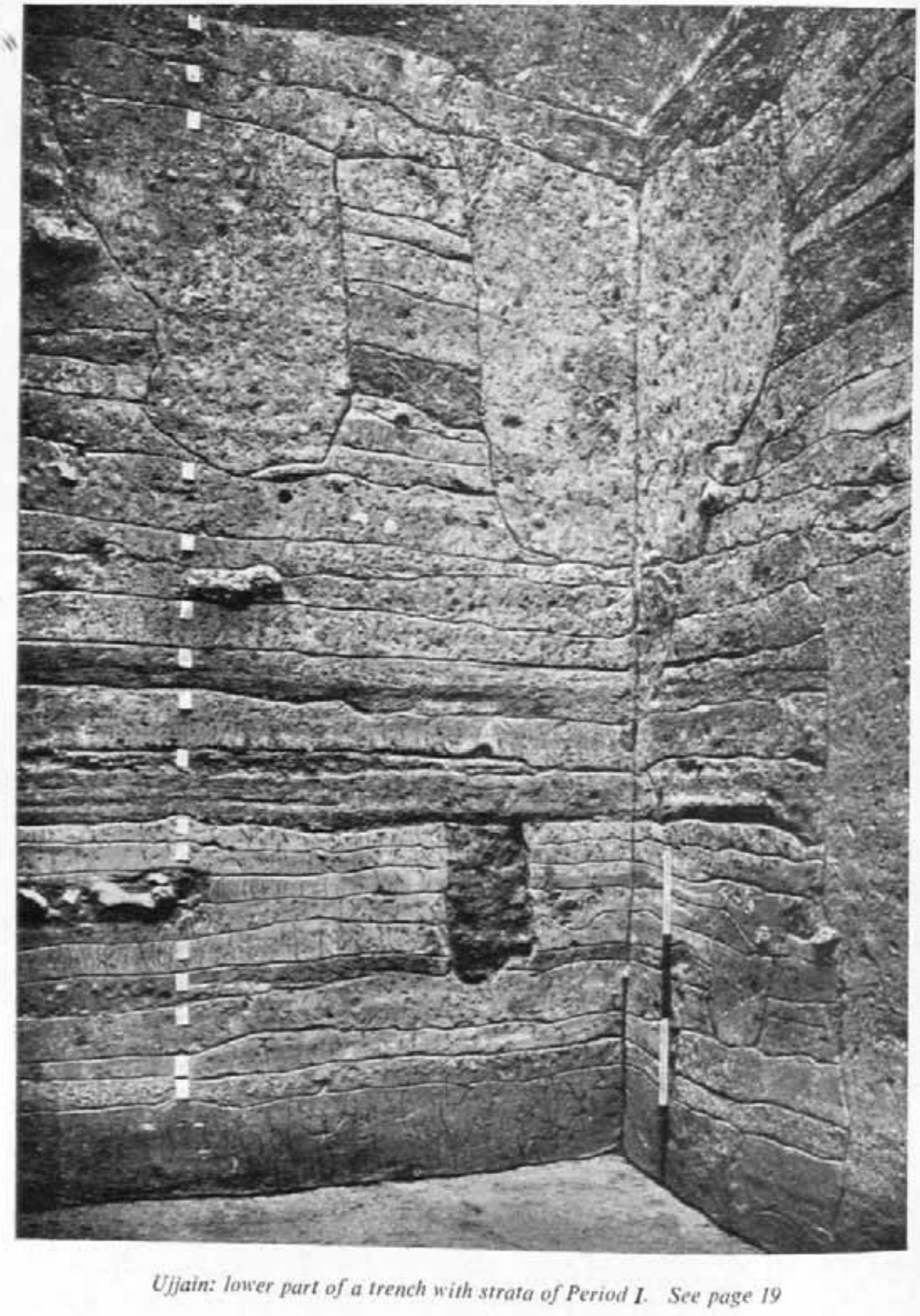

B



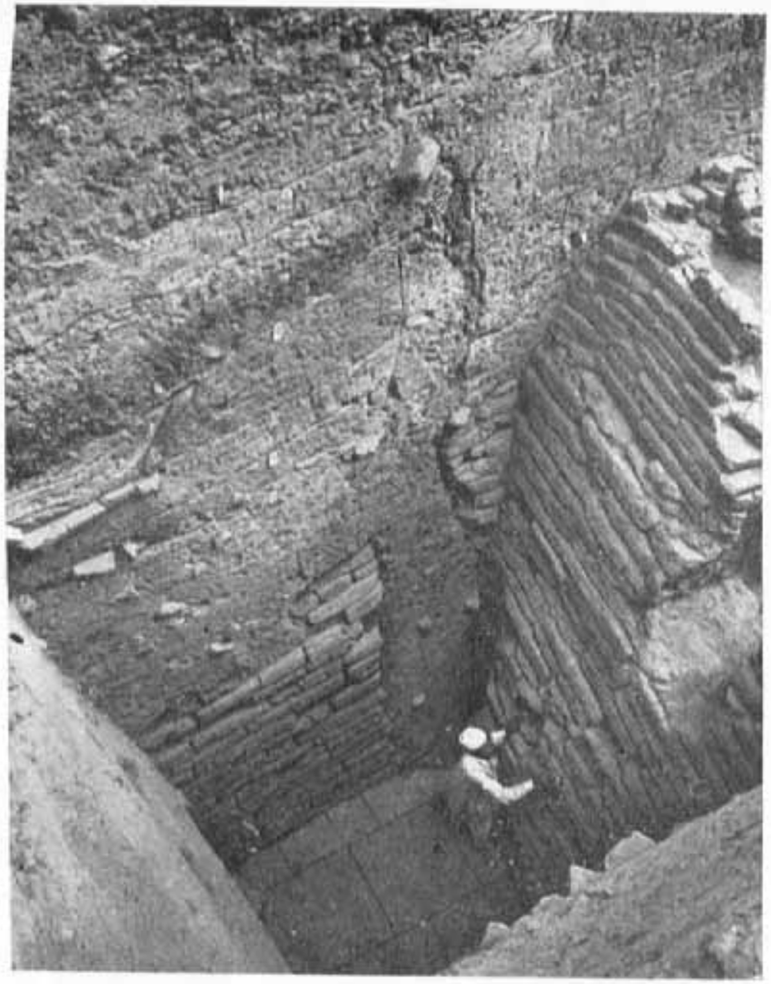

C

*Nagda: objects from Period III, A, storage-jar, B, incised terracotta object, and C, inscribed sherd.* *See pages 14 and 19*

PLATE XXVI



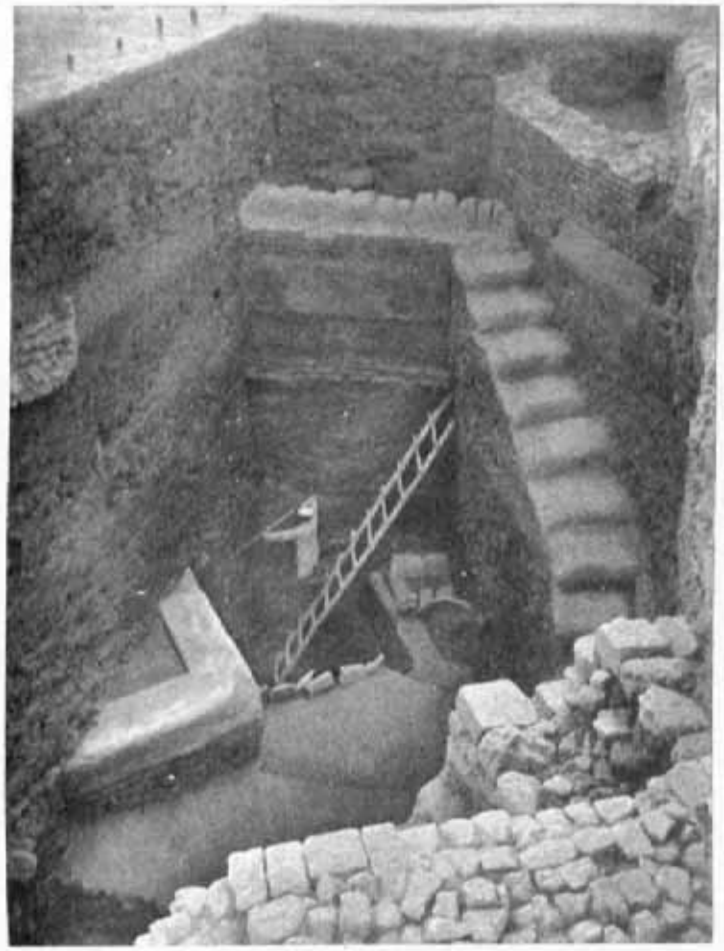
*Ujjain: lower part of a trench with strata of Period I.* *See page 19*





A B

*Ujjain:* A, *structures,* B, *terracotta ring-wells, of Period I.* *See page 19*



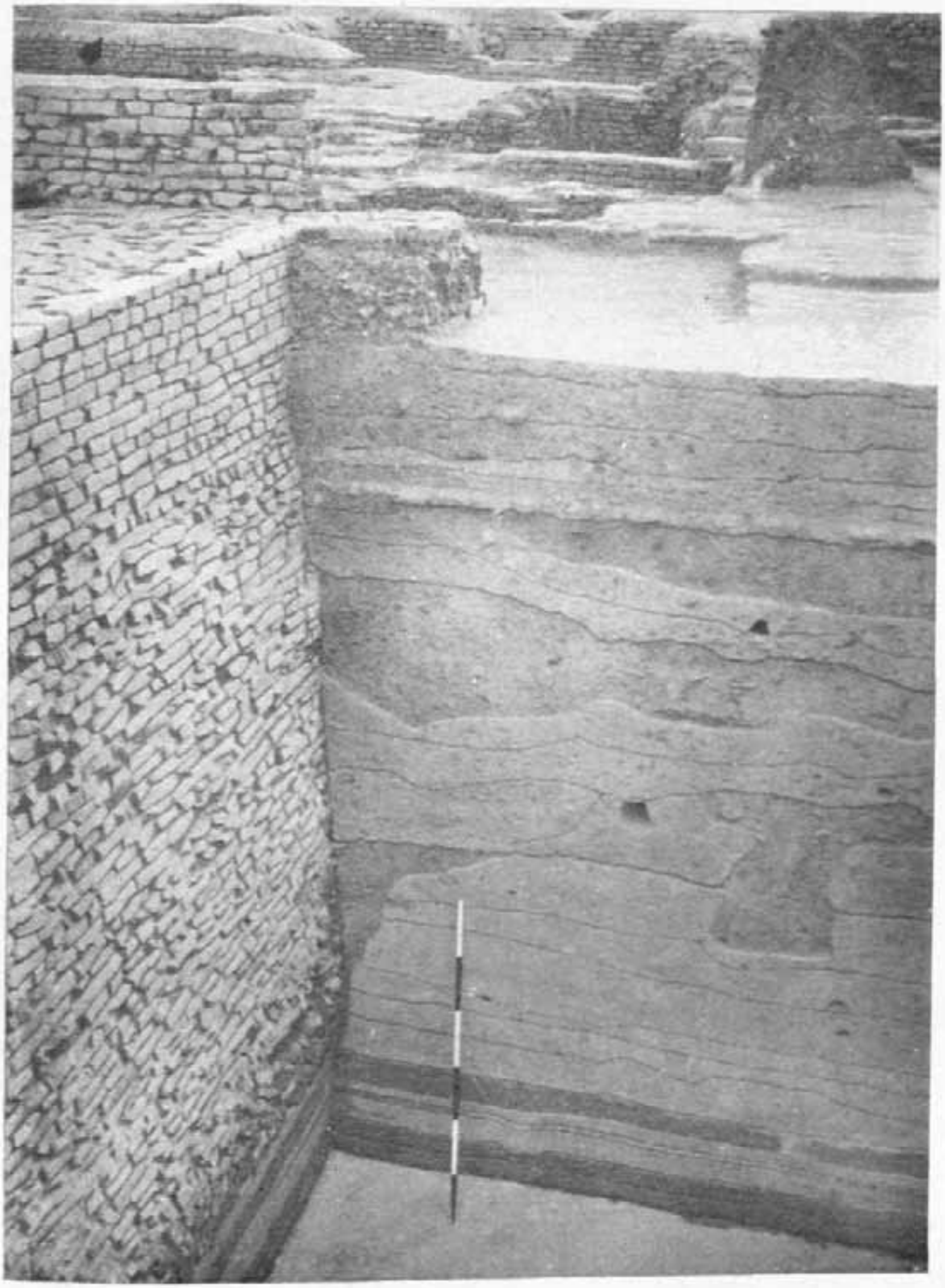
A




B

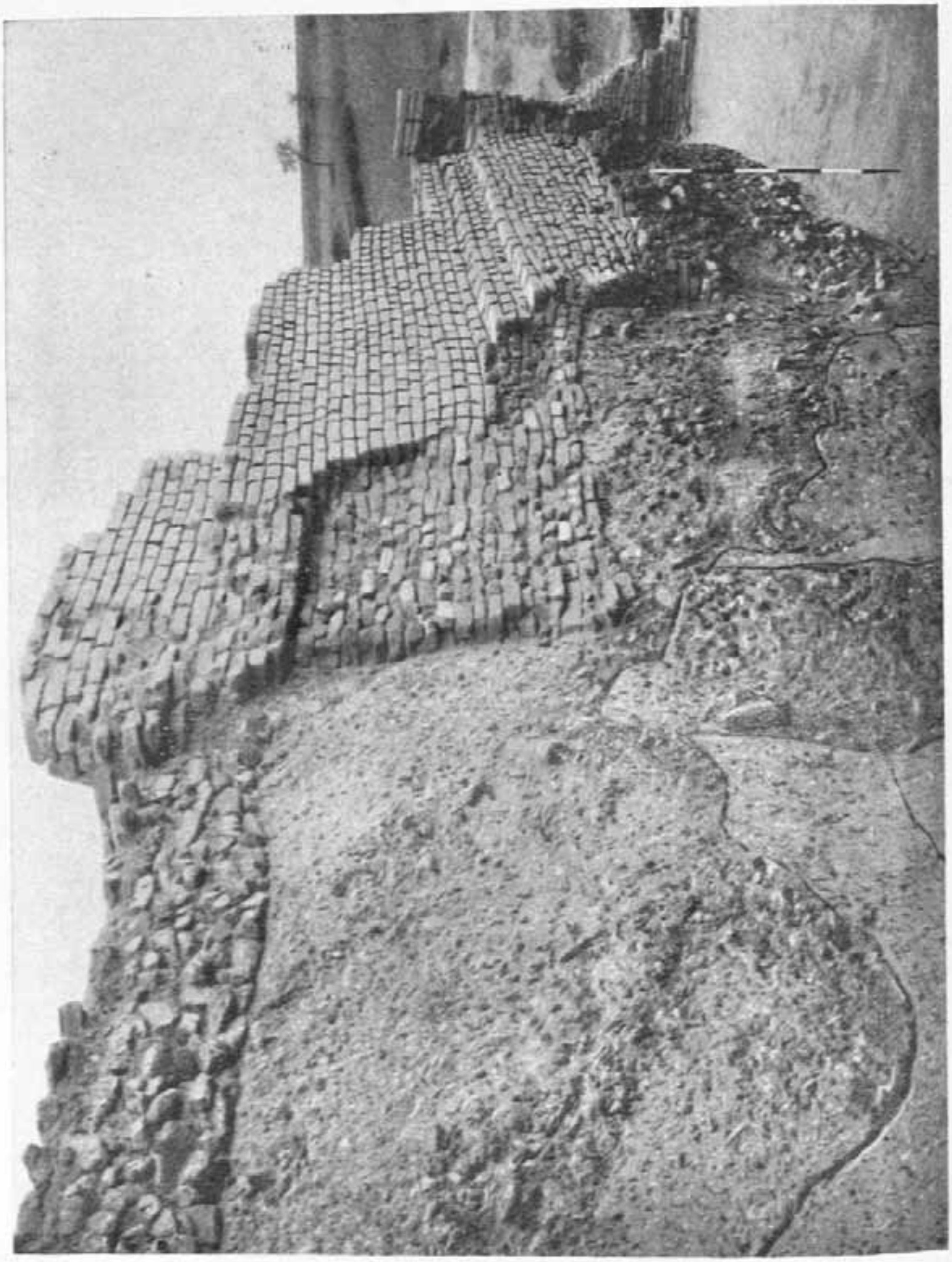
*Kanauj:* A, *view of the excavated trench;* B, *terracotta figurines, Period III.* *See page 19*

PLATE XXIX



*Kausambi: section against a wall of Main Stupa in Ghoshitarama.* *See page 20*

PLATE XXX



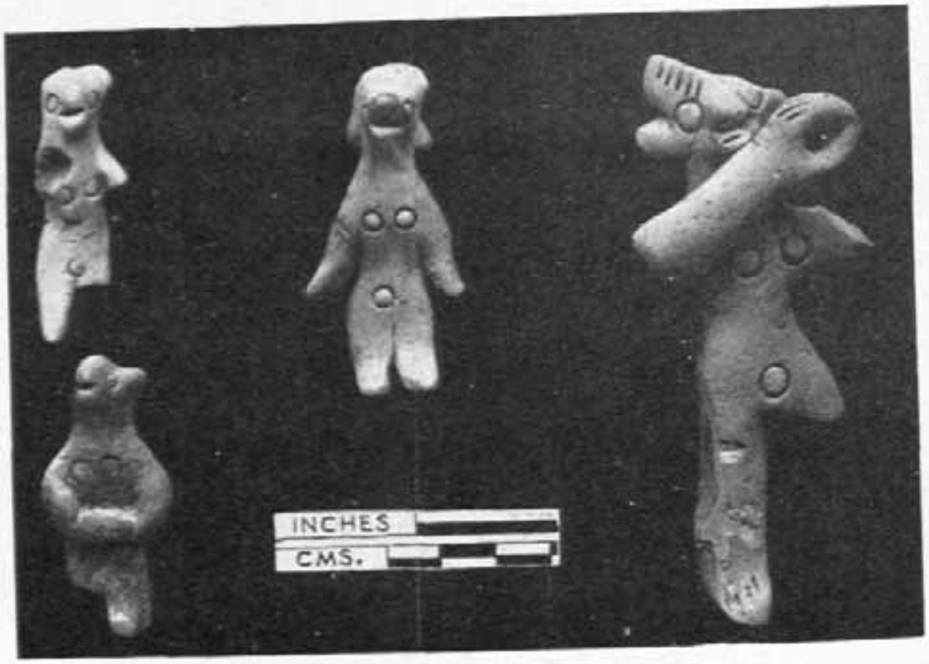
Kausambi: western compound-wall of Ghoshitarama with stepped foundation. See page 20

PLATE XXXI

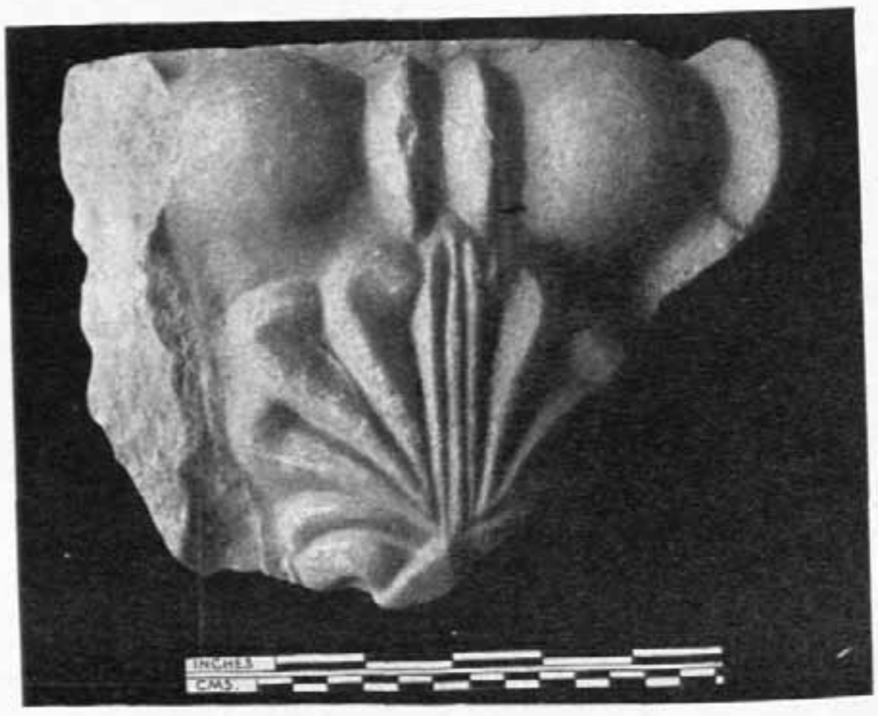


*Kausambi: stone sculptures from Ghoshitarama.* *See page 22*

PLATE XXXII

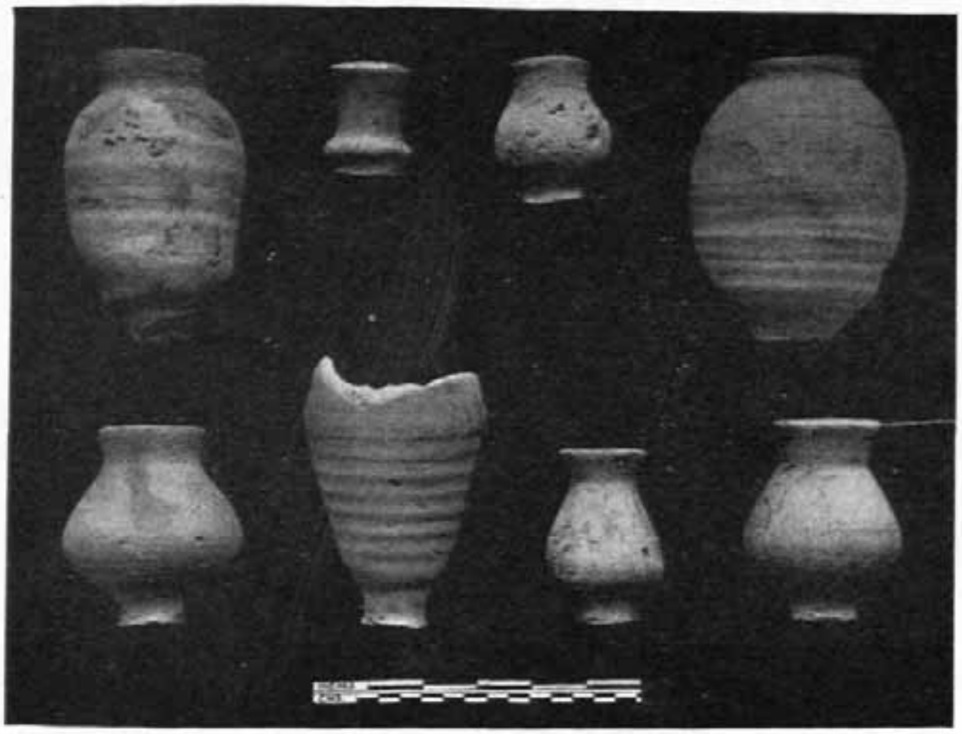



A




B

*Pataliputra:* A, *terracotta figurines, Period I;* B, *fragment of polished Asokan capital* (?). *See page 22*



A







B

C

*Pataliputra:* A, *pottery,* B *and* C, *terracotta figurines, Period III.* *See page 22*

PLATE XXXIV




A



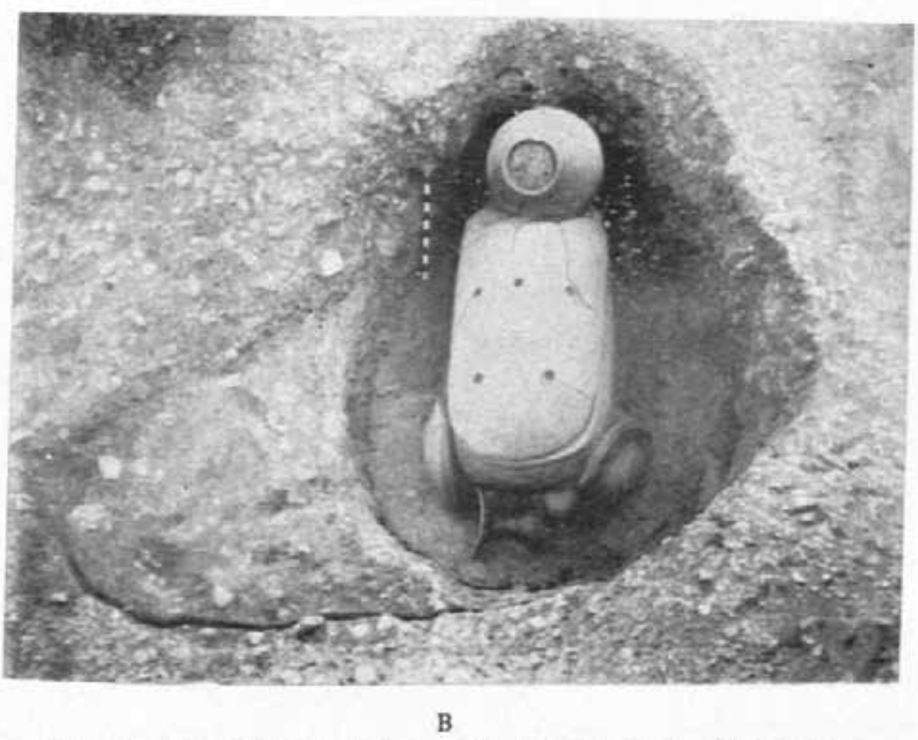

B

*Pataliputra:* A, *decorated terracotta objects, and* B, *gold amulet imitating Kushan coin, Period III.* *See page 22*

PLATE XXXV



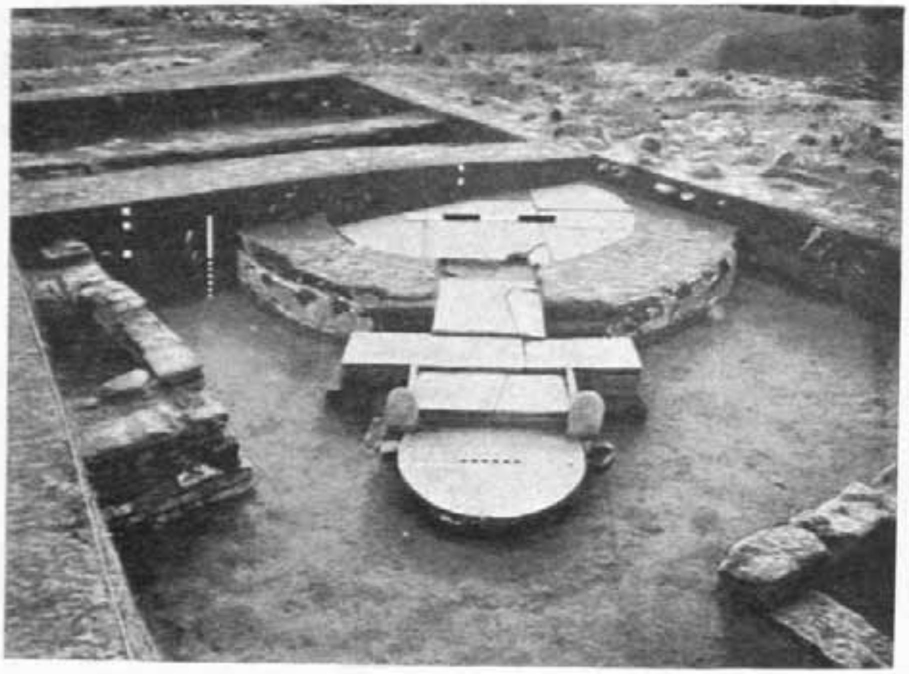
A



B

*Kunnattur: Megalith III,* A, *before, and* B, *after excavation.* *See page 23*

PLATE XXXVI



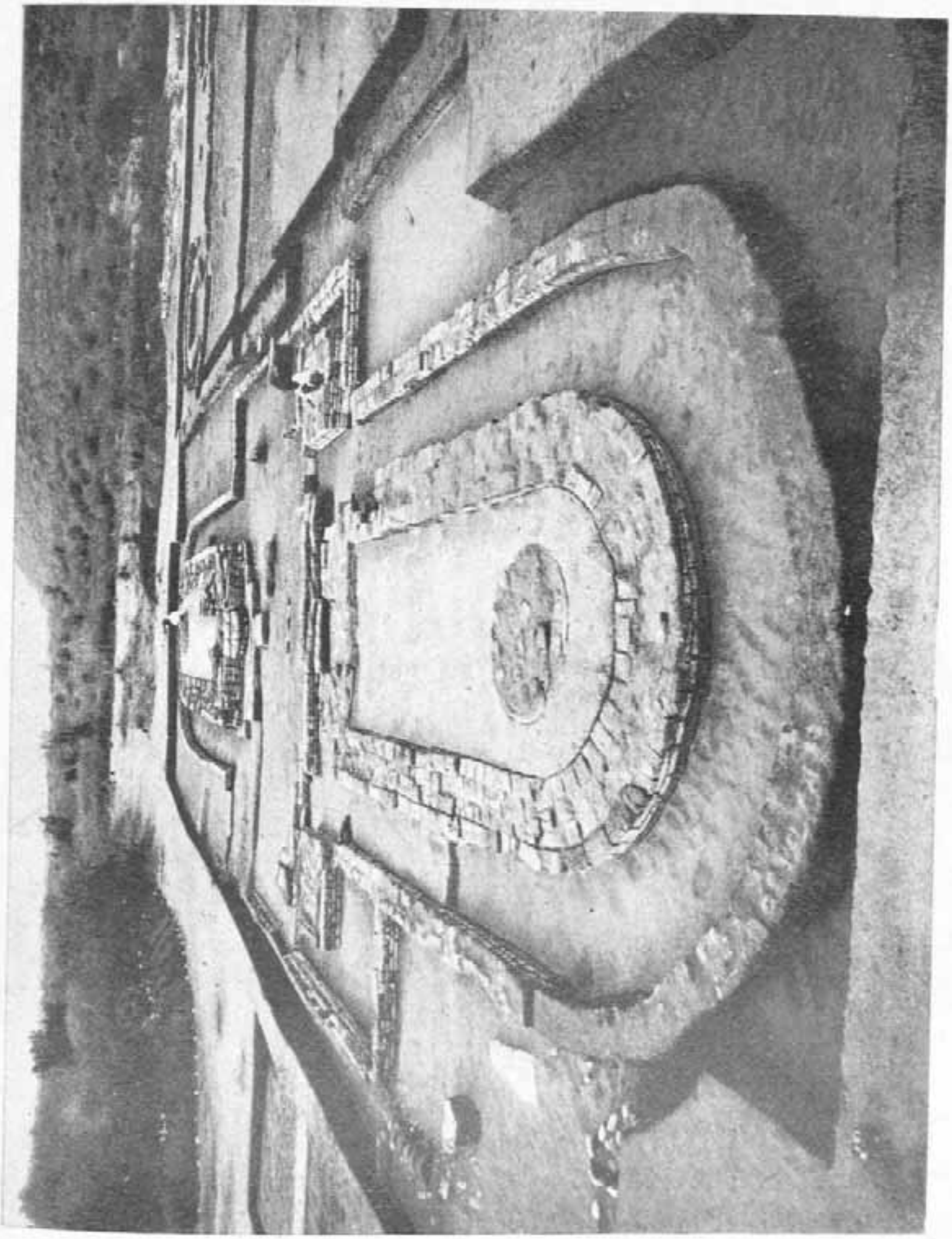
A



B

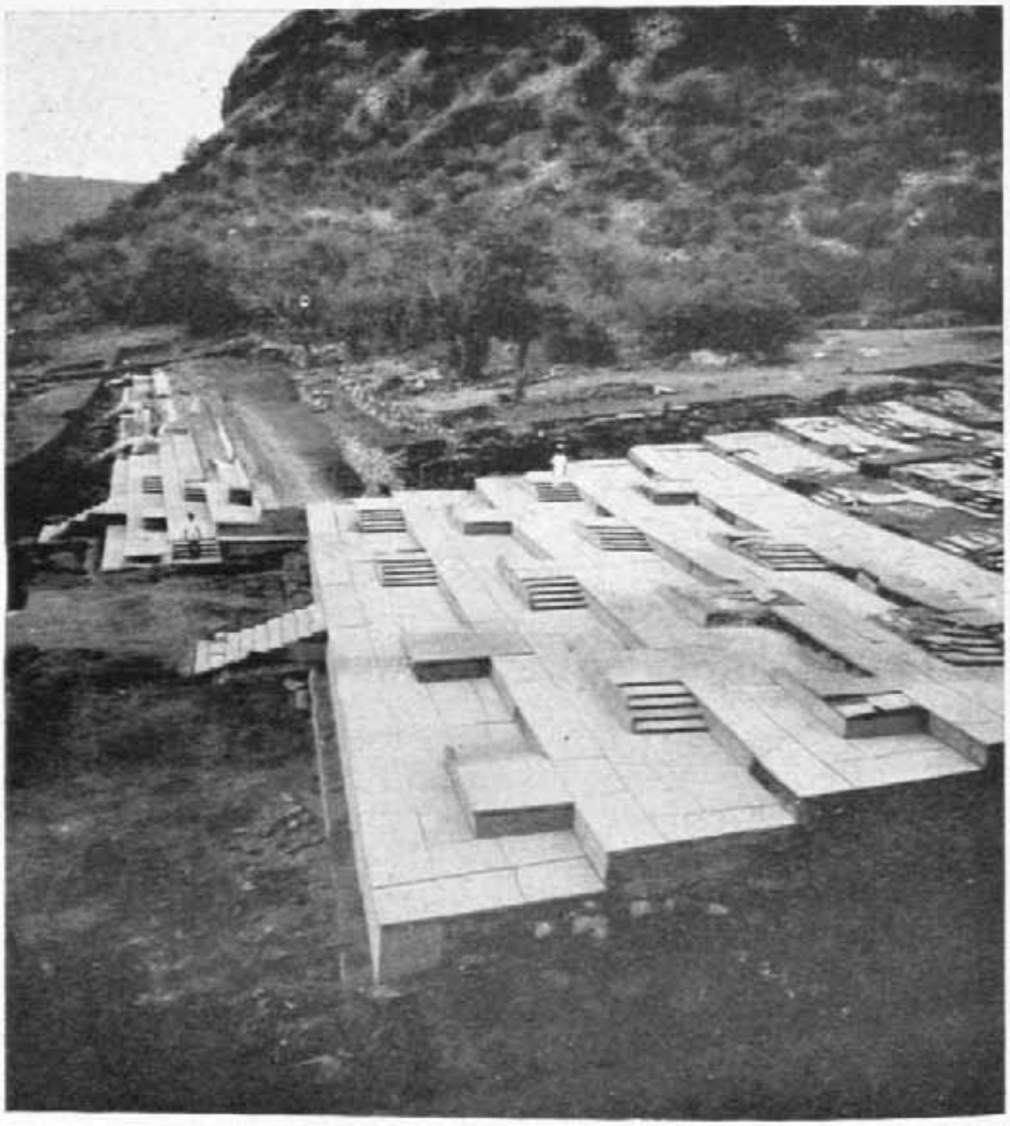
*Nagarjunakonda:* A, *entrance to shrine-chamber in Site XIII;* B, *chaitya-chamber with inscribed pillar inside in Site XIII.* *See page 24*

PLATE XXXVII



*Nagarjunakonda: chaitya-grihas in Site XV.* *See page 25*

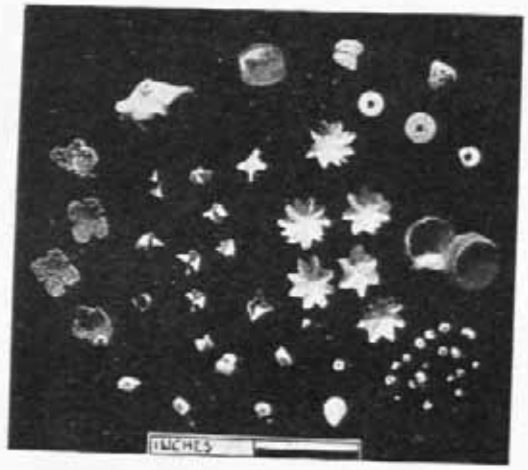
PLATE XXXVIII



*Nagarjunakonda: flight of steps on river-bank.* *See page 25*



A




B



C

*Nagarjunakonda:* A, *inscribed pillar from Site XIII;* B, *objects in a relic-casket from Site VIII;* C, *inscribed Buddha-pada from Site V-6.* *See page 24*

PLATE XL



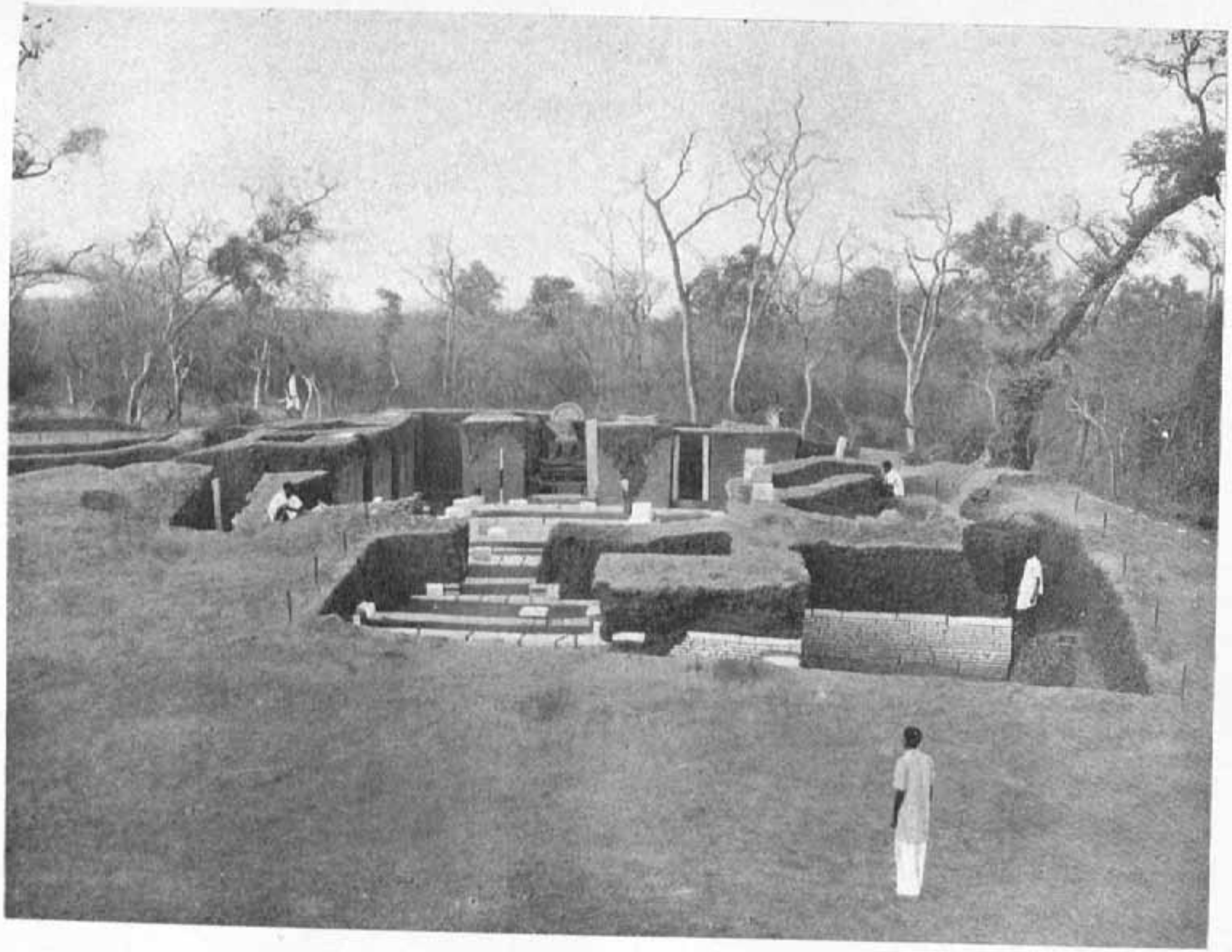
A



B

*Nagarjunakonda:* **A**, *stucco objects;* **B**, *terracotta figurines.* *See page 26*

PLATE XLI

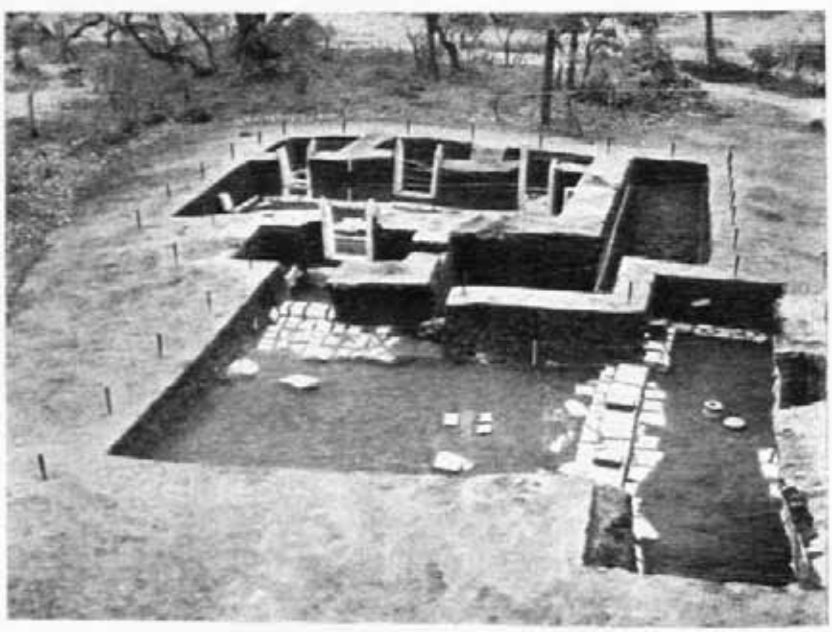


Sirpur: a svastika-shaped monastery during excavation. Scale of metres. See page 26

PLATE XLII



A



B

*Sirpur:* A, *interior of svastika-shaped monastery;* B, *Monastery V, during excavation. Scale of metres.*
*See page 26*



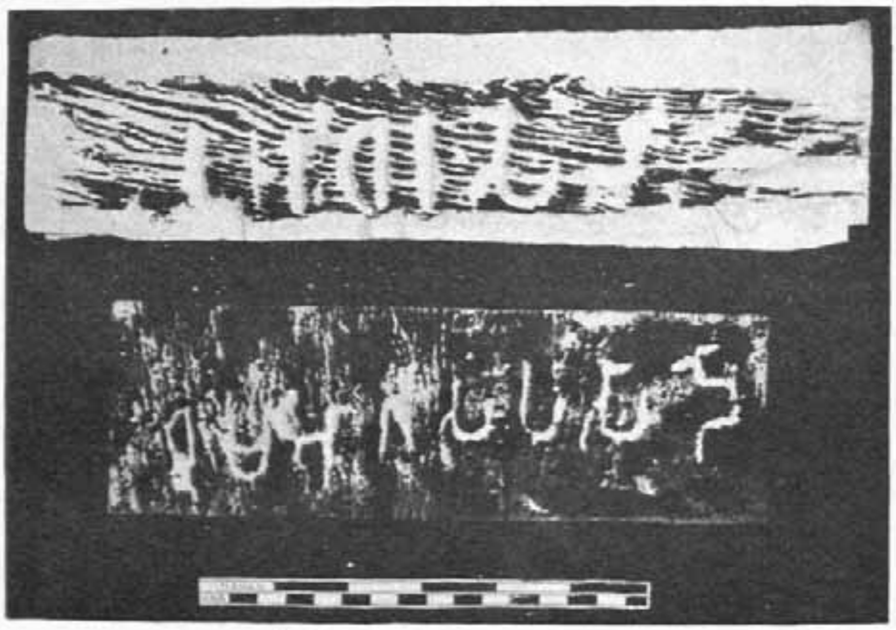
A

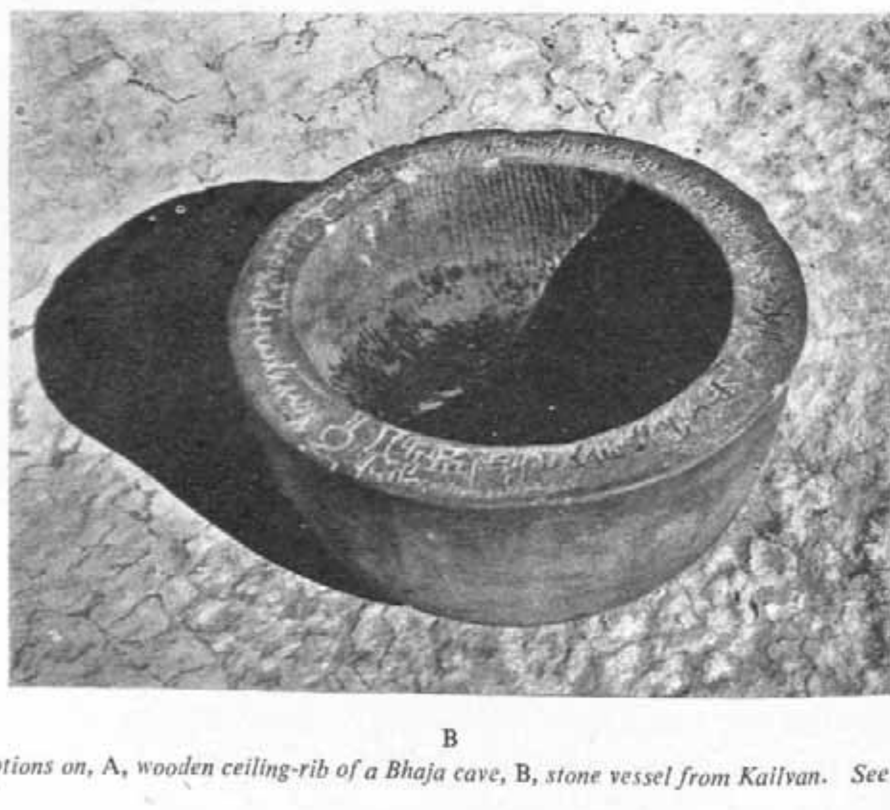


B

*Sirpurt* A, *Buddha and Avalokitesvara enshrined in svastika-shaped monastery;* B, *votive terracotta tablets from Monastery V. Scale of metres. See pages 26 and 27*

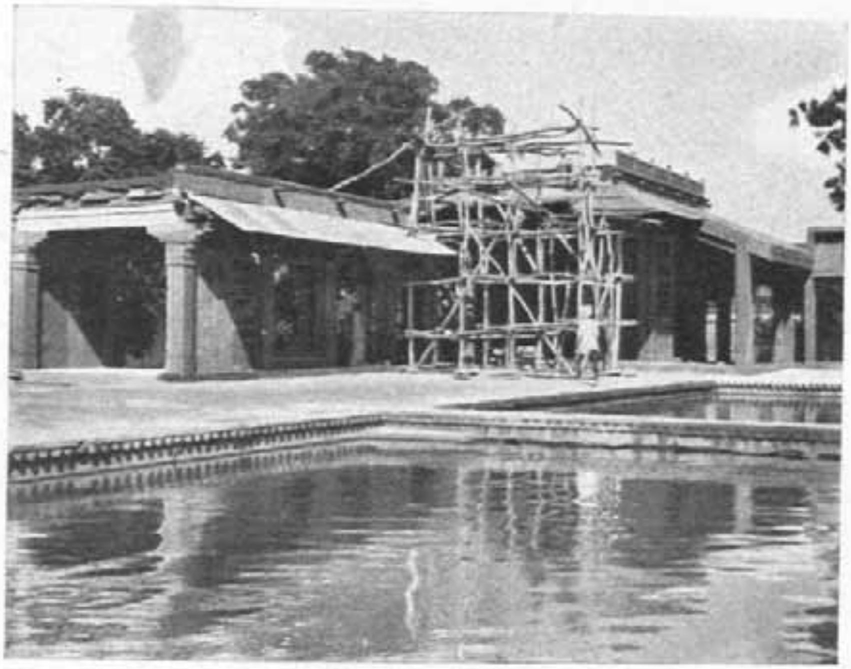
PLATE XLIV



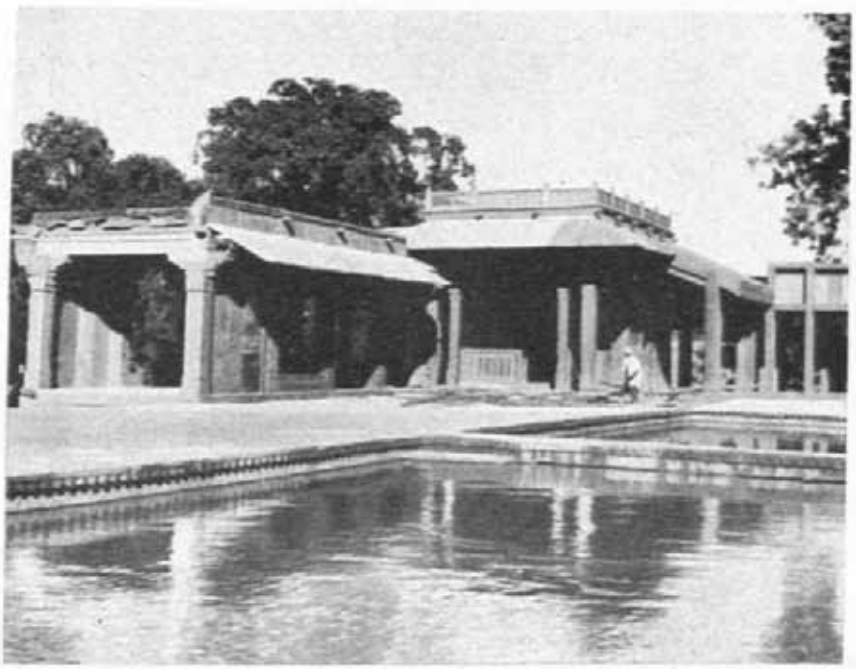


B

*Inscriptions on,* A, *wooden ceiling-rib of a Bhaja cave,* B, *stone vessel from Kailvan.* *See page 29*



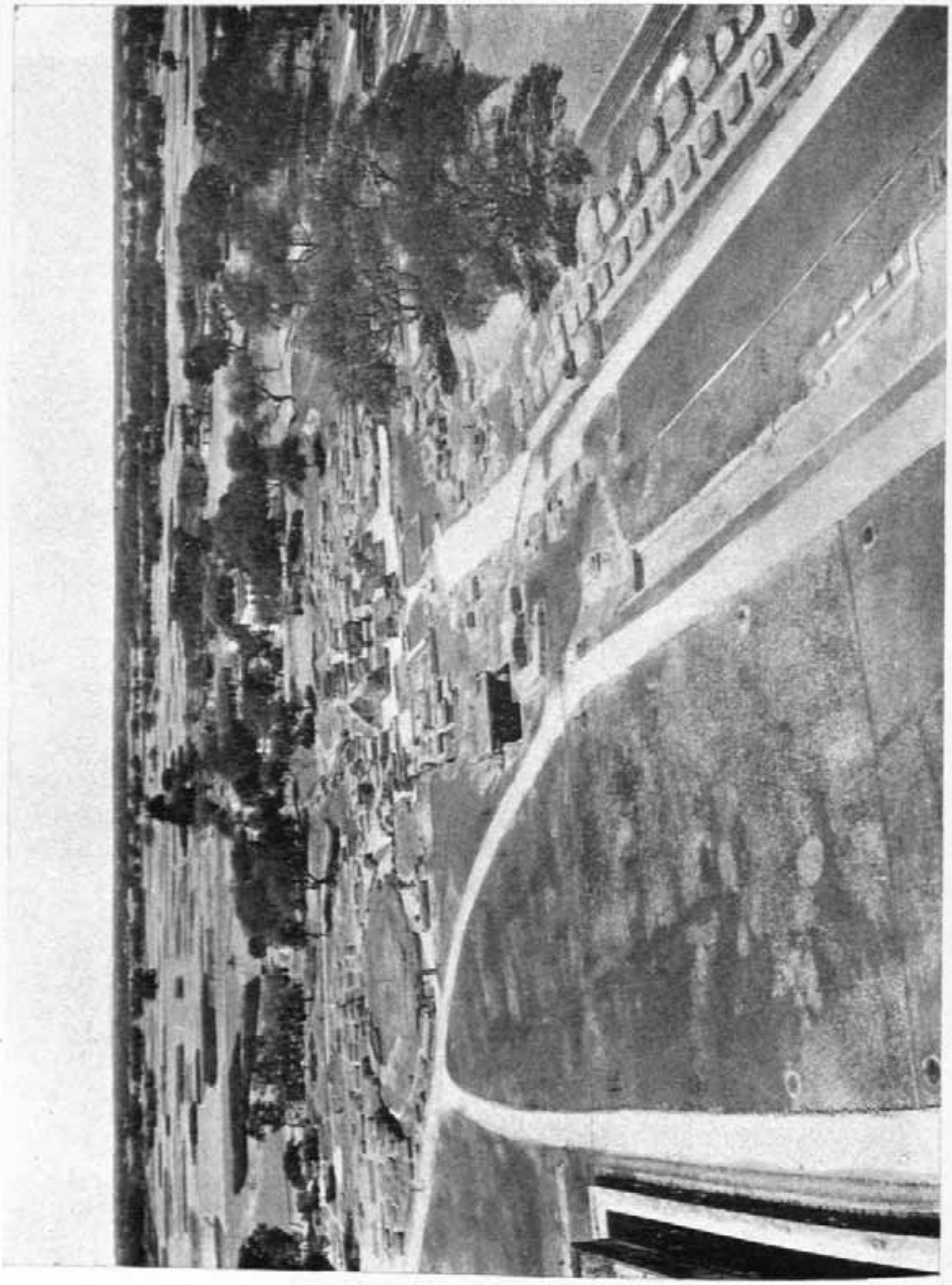
A



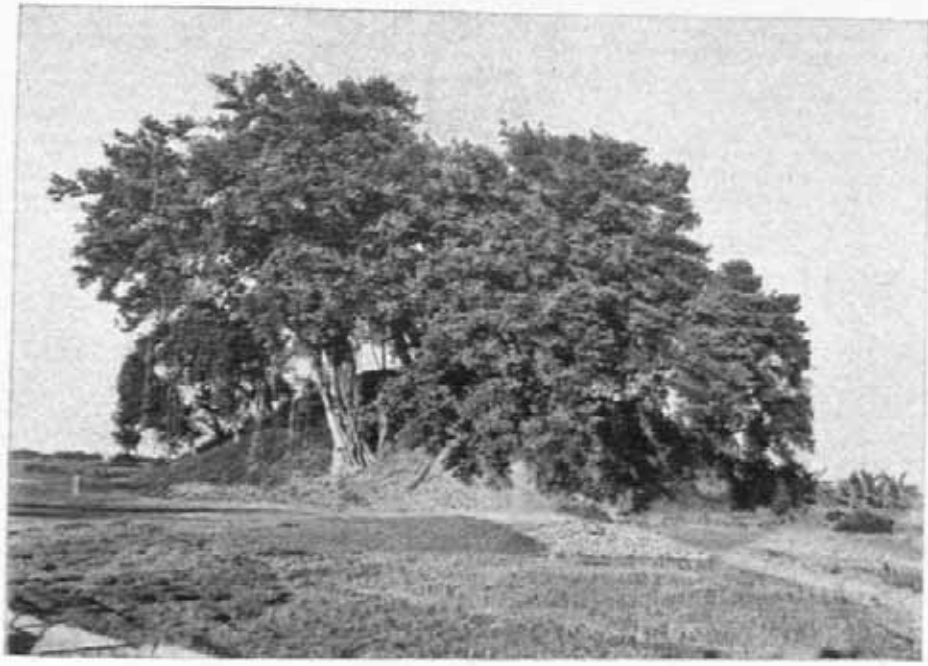
B

*Fatehpur Sikri: Turkish Sultana's house,* A, *during, and* B, *after repairs.* *See page 36*

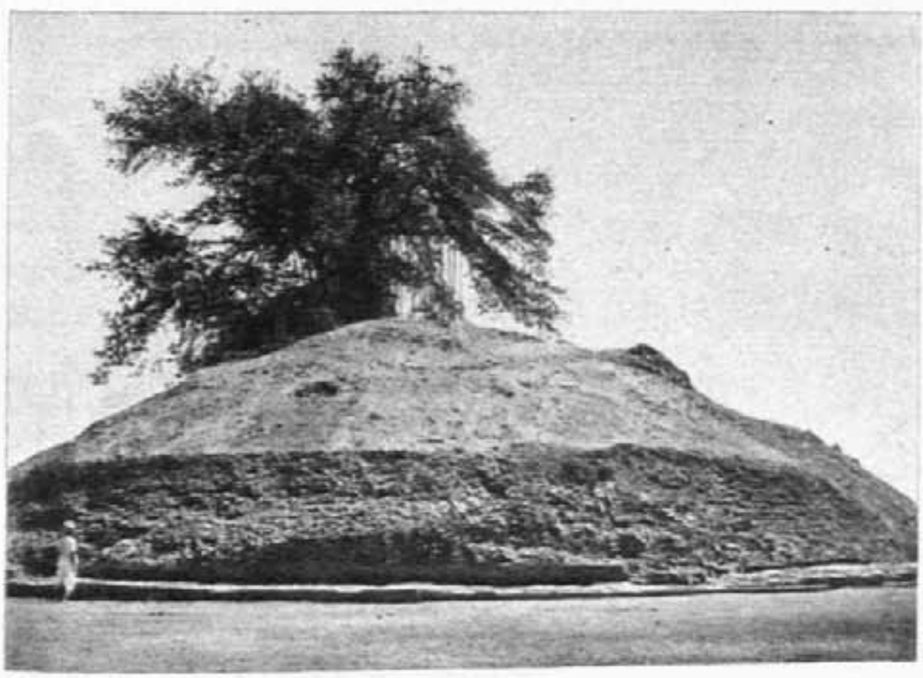
PLATE XLVI



*Sarnath: general view of excavated remains after turfing, laying of pathways, etc., from the top of Dhamekh Stupa.* *See page 38*



A



B

*Kusinagara: Ramabhar Stupa*, A, *before, and* B, *after clearance*. *See page 38*

PLATE XLVIII



A



B



C

*Konarak:* A, *brick temple in south-west corner of the compound, found after sand-clearance;* B *and* C, *parsvadevatas in the temple.* *See page 39*



A



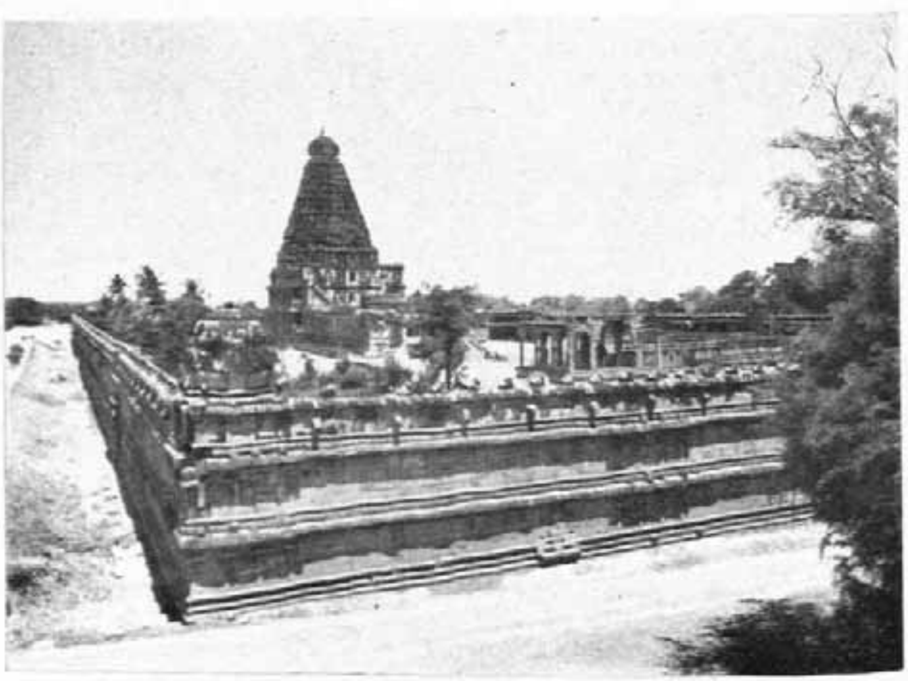
B

*Gingee: steps in Chettikulam tank, A, before, and B, after repairs.* *See page 42*

PLATE L



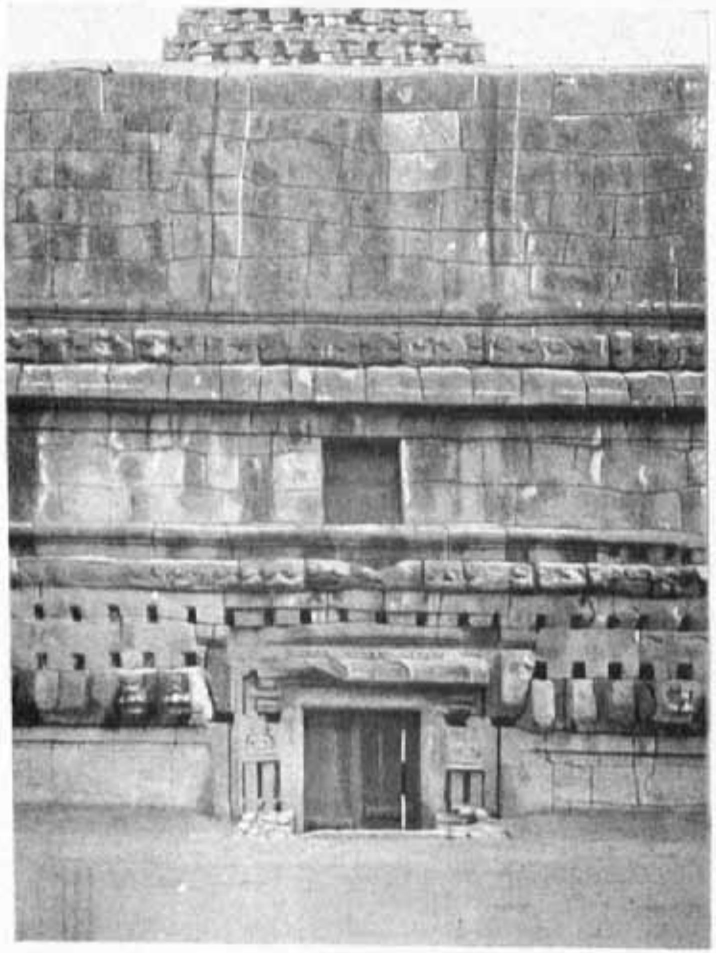
A



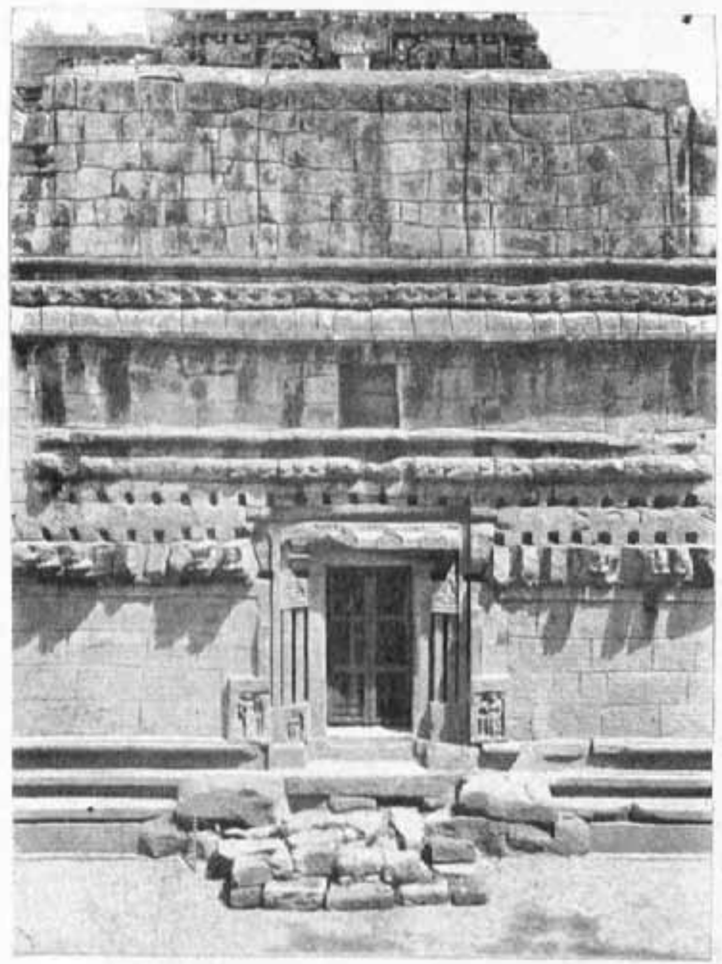
B

*Tanjore: Brihadisvara temple, south-east corner of compound-wall,* A, *before, and* B, *after clearance of plinth.* *See page 43*

PLATE LI



A



B

*Tanjore: Brihadisvara temple, north entrance, A, before, and B, after clearance of plinth and repairs.* *See page 43*

PLATE LII



*Ajanta: Cave 1, provision of ceiling-drain.* *See page 45*

PLATE LIII



A



B

*Ellora: Ganga-figure in Cave 21, A, before, and B, after repairs.* *See page 45*

PLATE LIV



A



B

*Isanpur: mosque, A, before, and B, after repairs.* *See page 48*



A



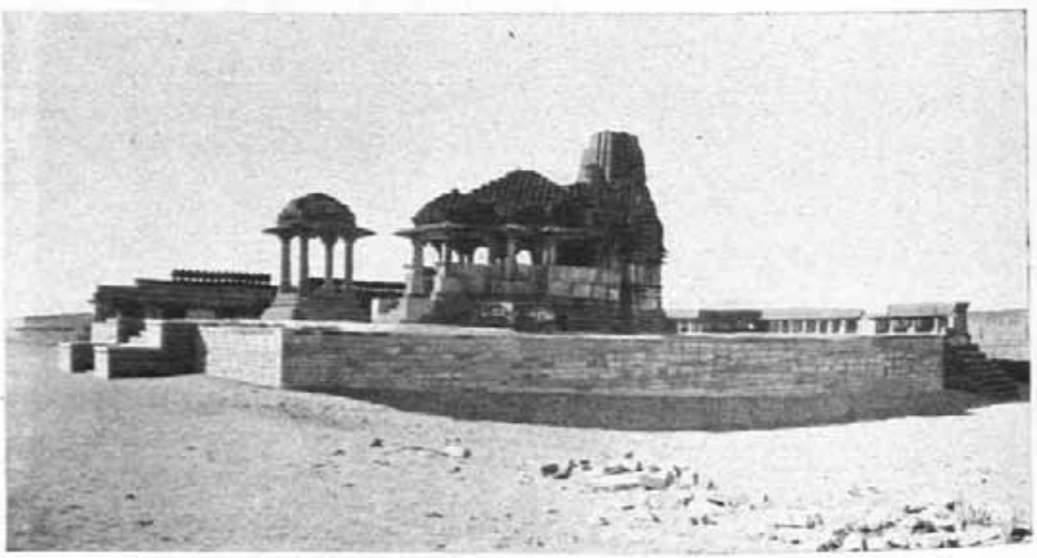
B

*Vatva: tomb of Qutb-i-'Alam, A, before, and B, after repairs.* *See page 48*

PLATE LVI



A



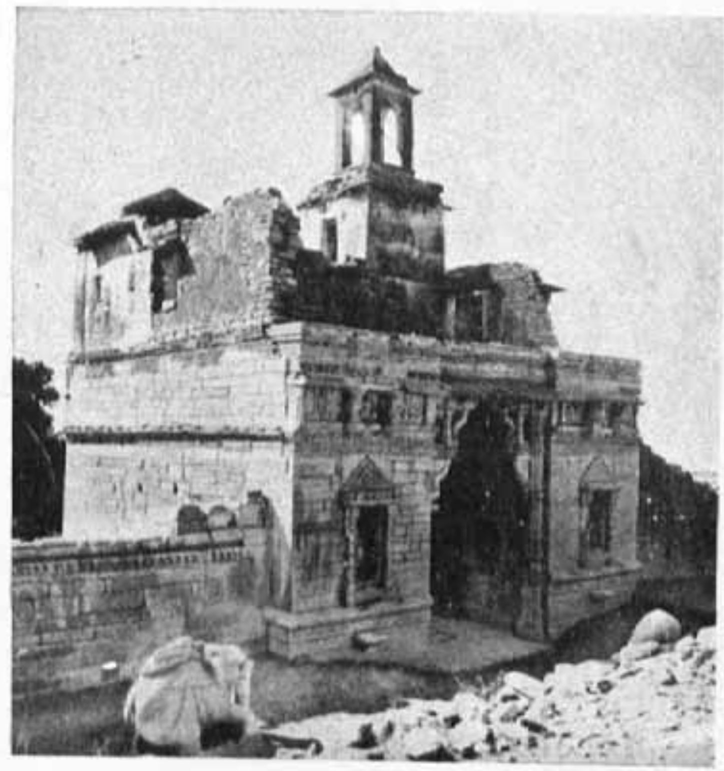
B

*Chittorgarh: Jatasankar temple,* A, *before, and* B, *after repairs.* *See page 49*

PLATE LVII



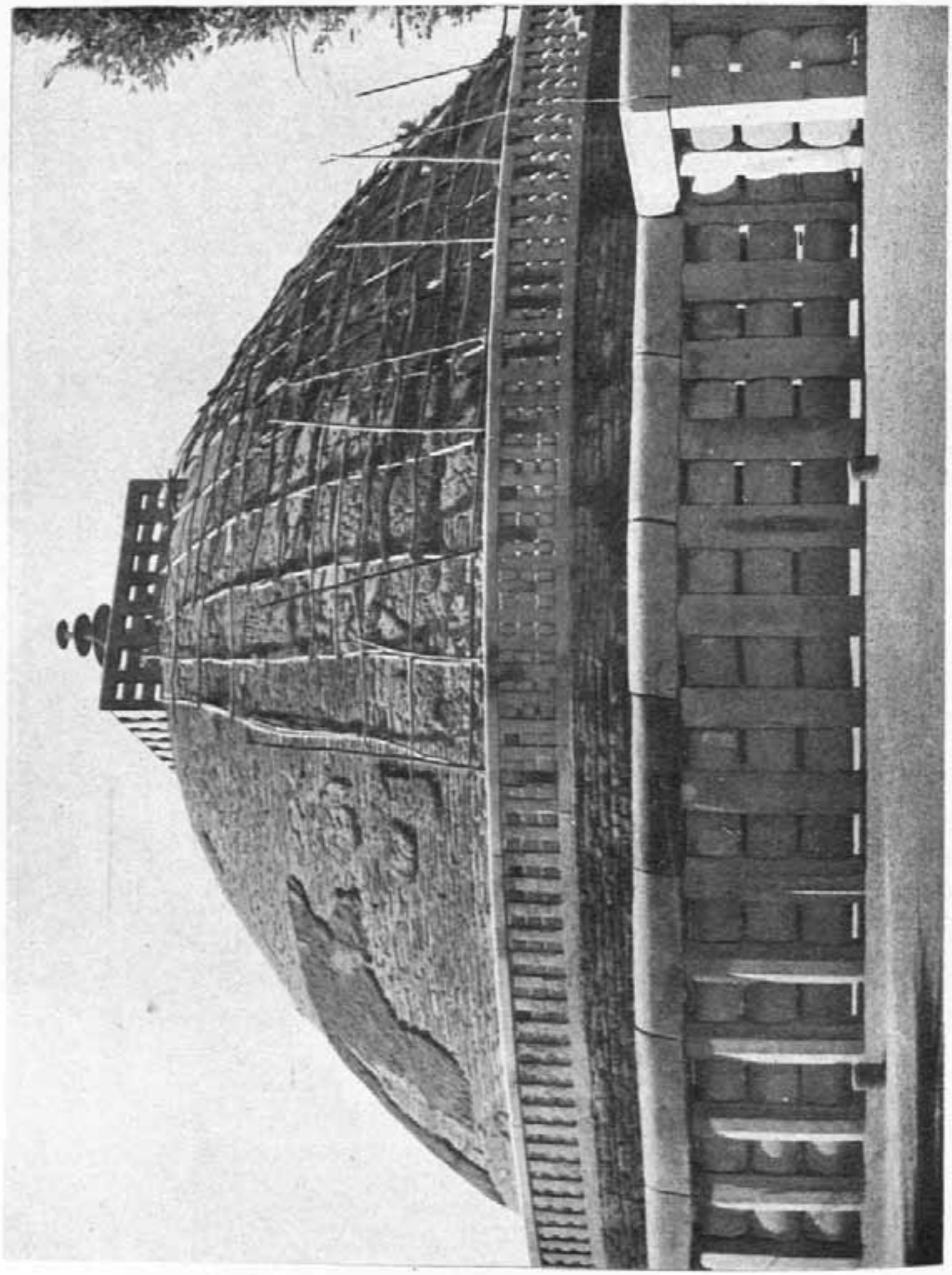
A



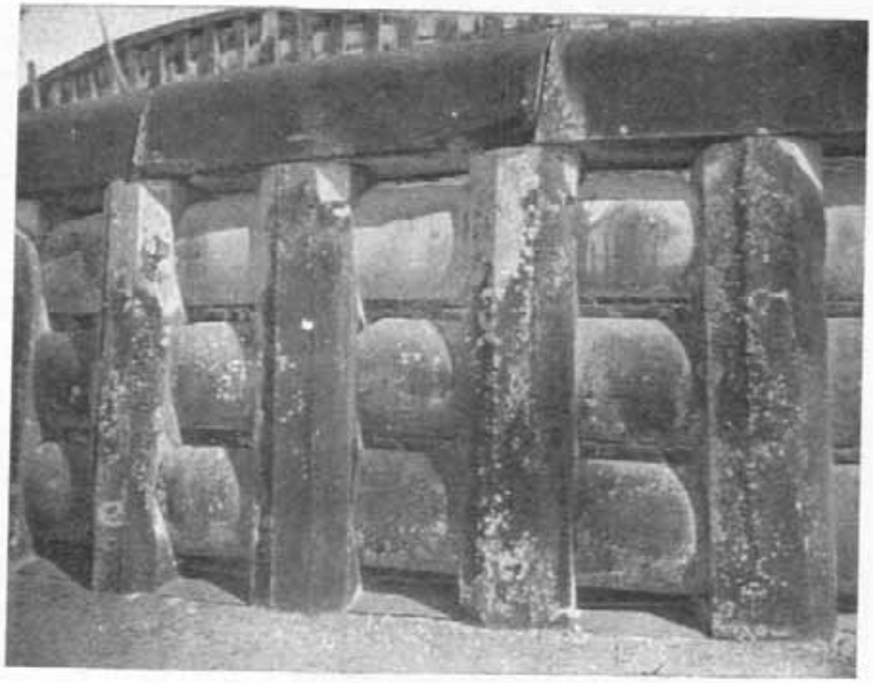
B

*Chittorgarh: northern gate of Mahasati enclosure, A, during, and B, after repairs.* *See page 49*

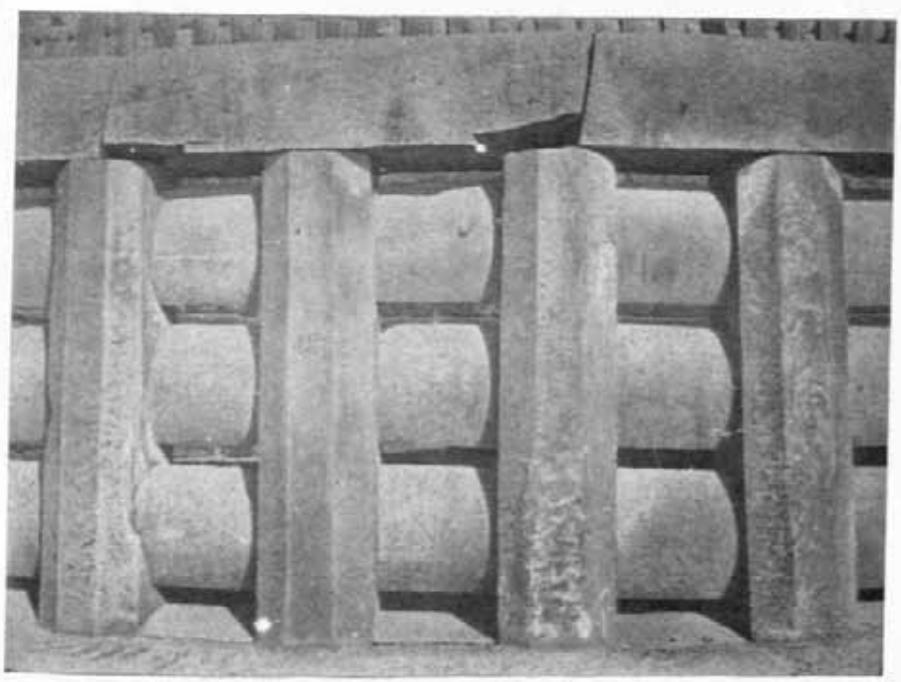
PLATE LVIII



*Sanchi: Stupa 1, during consolidation and treatment of plaster.* *See pages 50 and 53*



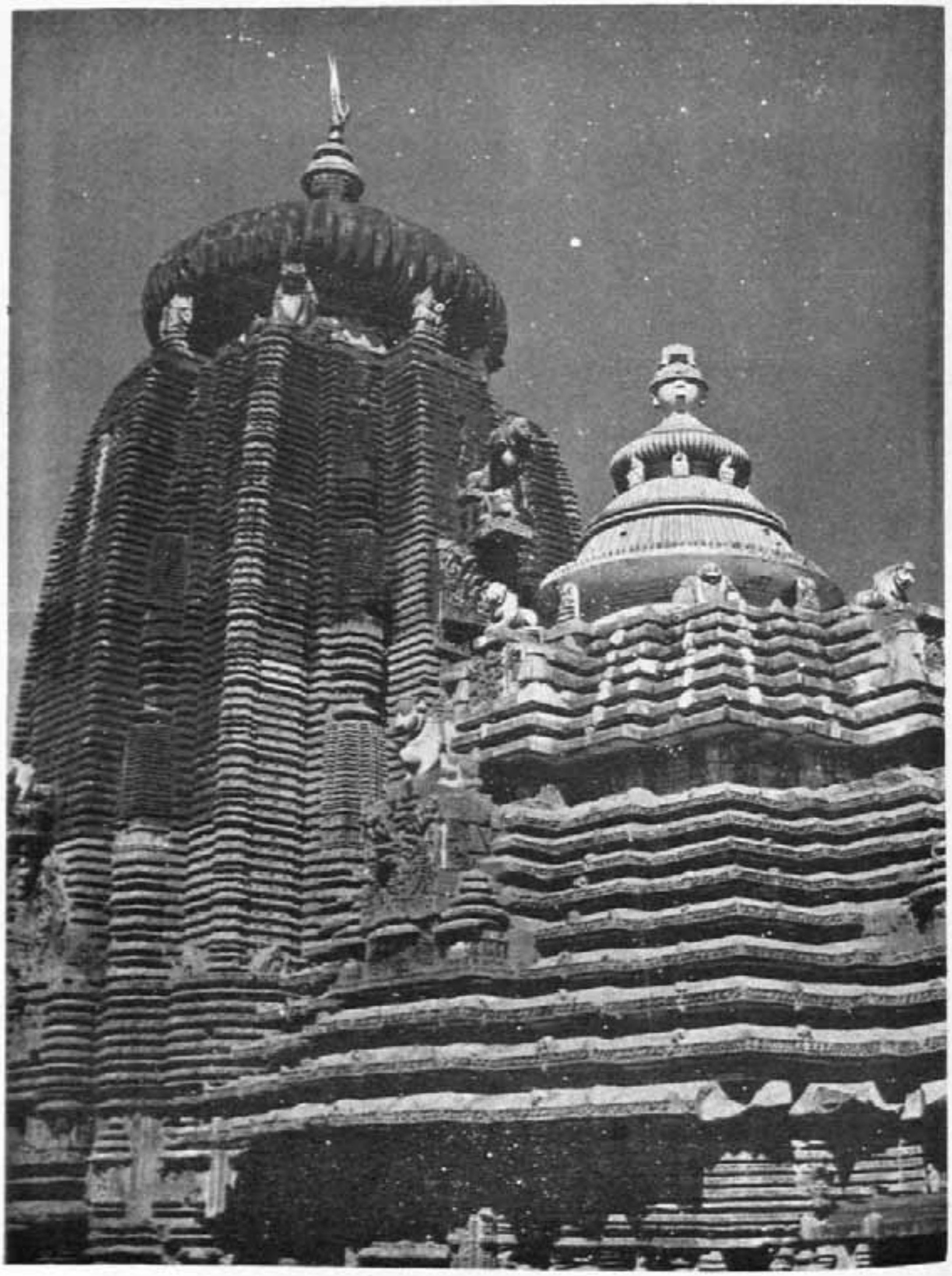
A



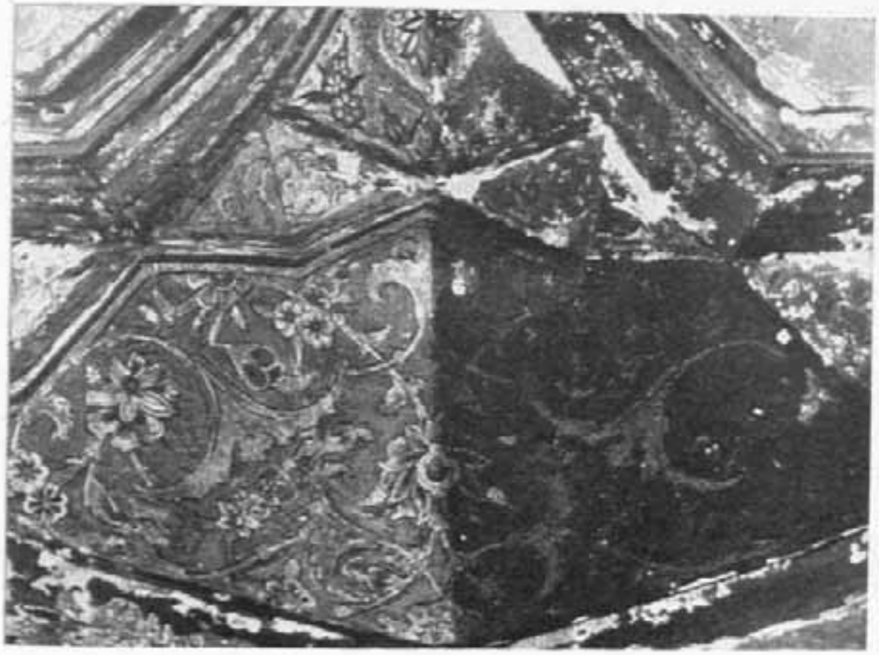
B

*Sanchi: railing of Stupa 1, A, before, and B, after chemical cleaning.* *See Page 53*

PLATE LX



*Bhuvaneswar: Lingaraja temple, after partial chemical cleaning.* *See page 53*



A



B

*Agra: paintings after partial chemical treatment*, A, *at Sunheri Mahal, Sikandara, and* B, *'Itimadu'd Daulah.* *See page 54*

PLATE LXII



B



A

Paintings after partial chemical treatment: A, in Sultanu'n Nisa's tomb, Khusrobagh, Allahabad, and B, in Mahakali temple, Chanda. See page 54

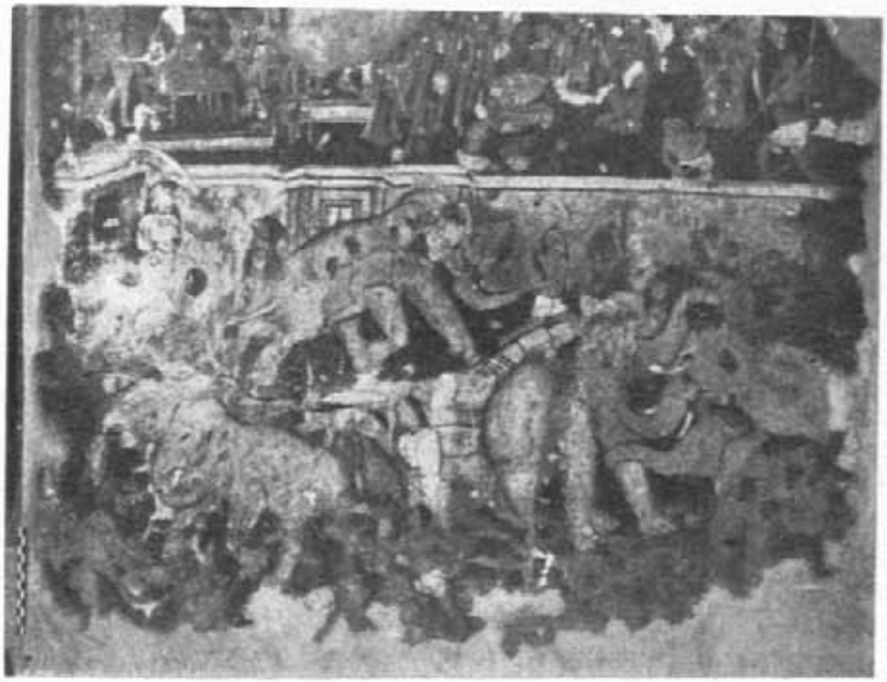


A



B

Baroda: painting in Tambekarwada, A, before, and B, after chemical treatment. See page 54



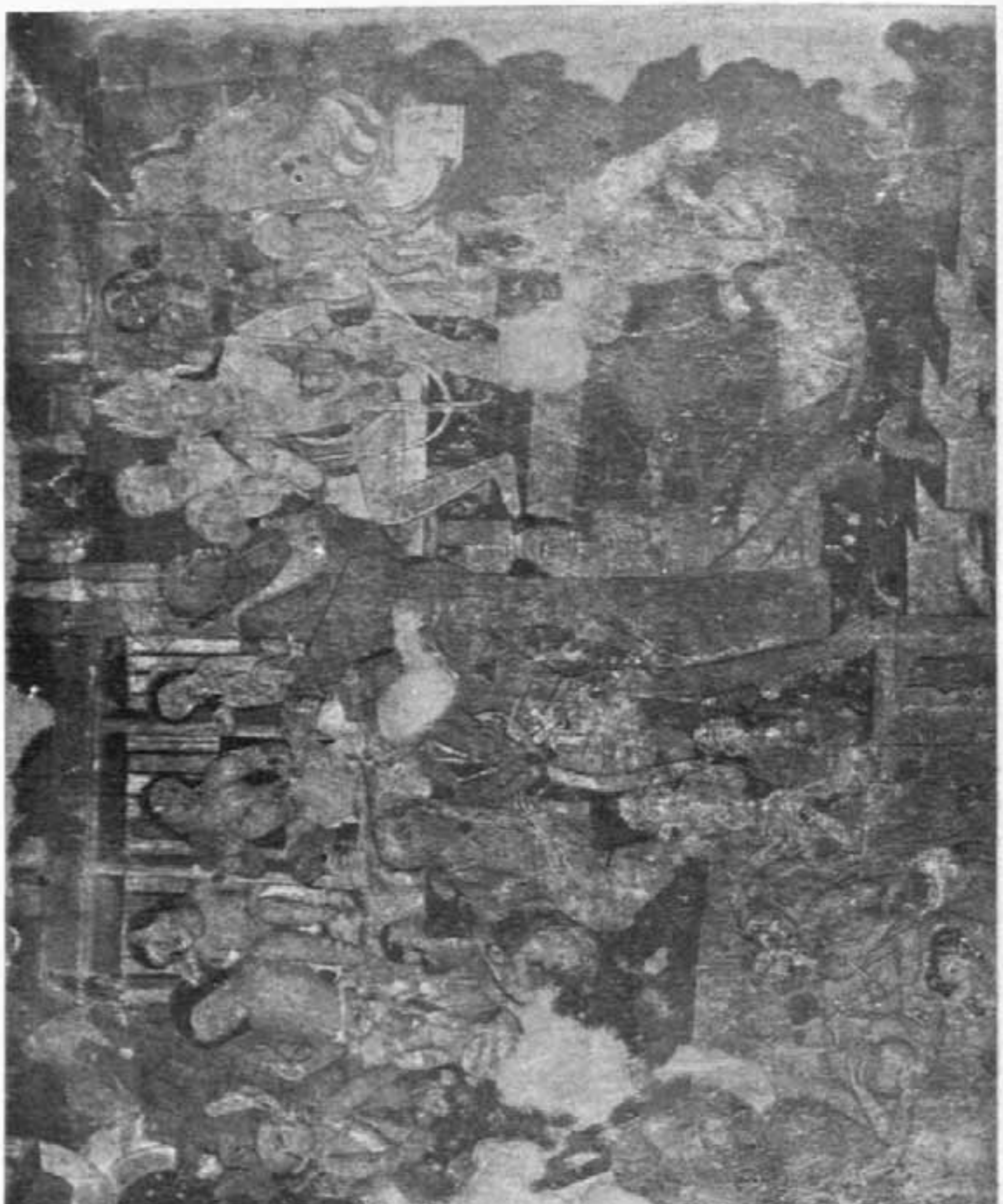
A



B

*Ajanta: painting in Cave 17, A, before, and B, after chemical treatment.* *See page 55*

PLATE LXV



*Ajanta: painting in Cave 17, before chemical treatment.* *See page 55*

PLATE LXVI



*Ajanta: painting in Cave 17, after chemical treatment.* *See page 55*

PLATE LXVII



A



B

*Cochin: painting in Mattancheri palace,* A, *before, and* B, *after chemical treatment.* *See page 55*



A



B

*National Museum: A, stone sculpture with flying gandharvas from Aihole; B, bronze Nataraja from Tiruvarangulam.* *See page 59*



A



B



C

*A, Sarnath Museum, stone image of Agni from Sarnath;* B *and* C, *Lucknow Museum, fragmentary Asokan capital from Basti ht. 2 ft. 7in., and inscribed brick,* $8 \times 3\frac{1}{4}$*in.* *See pages 60 and 61*



A



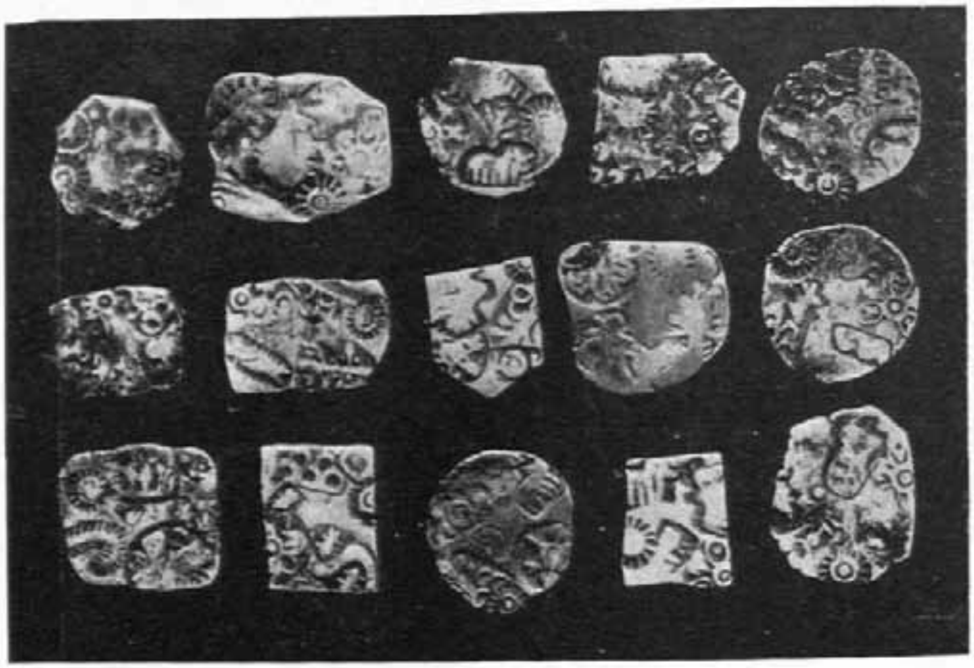
B

*Asutosh Museum:* A, *stone Manjusri from Bhangor, ht. 3 ft. 1 in.*; B, *bronze Vishnu from Sundarpur, ht. 1 ft. 6½ in.* *See pages 61 and 62*

PLATE LXXI



A



B

*Asutosh Museum: A, terracotta female head from Panna, ht. 9 in., B, silver punch-marked coins from Berachampa.* *See pages 61 and 62*



A



B

*Asutosh Museum*: A, *terracotta female head, ht.* 3¼ *in., and* B, *terracotta Surya-figure, ht.* 7½ *in., from Berachampa.* *See pages 61 and 62*

PLATE LXXIII




A

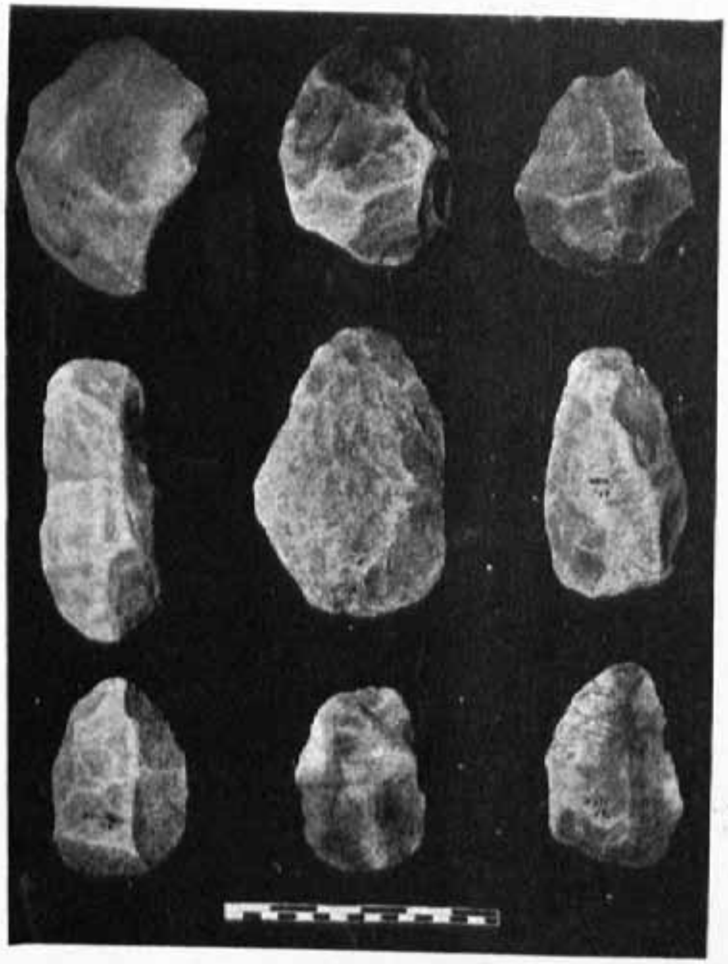


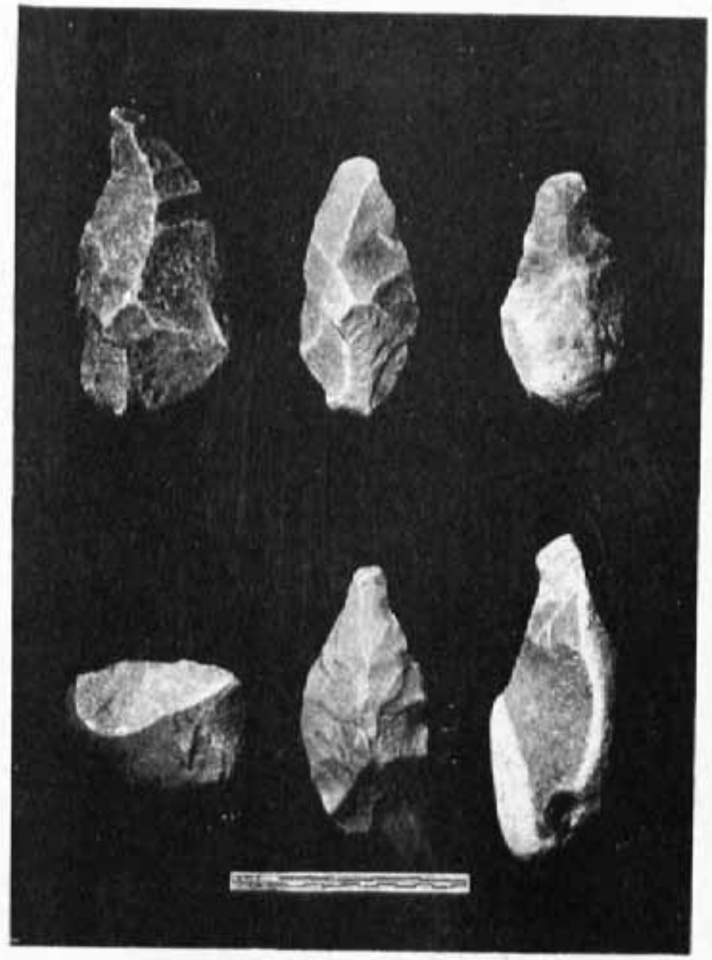
B



C

A *and* B, *Gauhati Museum, obverse and reverse of gold plaque with Chinese inscription,* $9\frac{1}{4} \times 3\frac{1}{2}$ *in.*; C, *stone Nishumbhasudani from Tanjore, ht. 4 ft. 6 in.* *See pages 62 and 73*

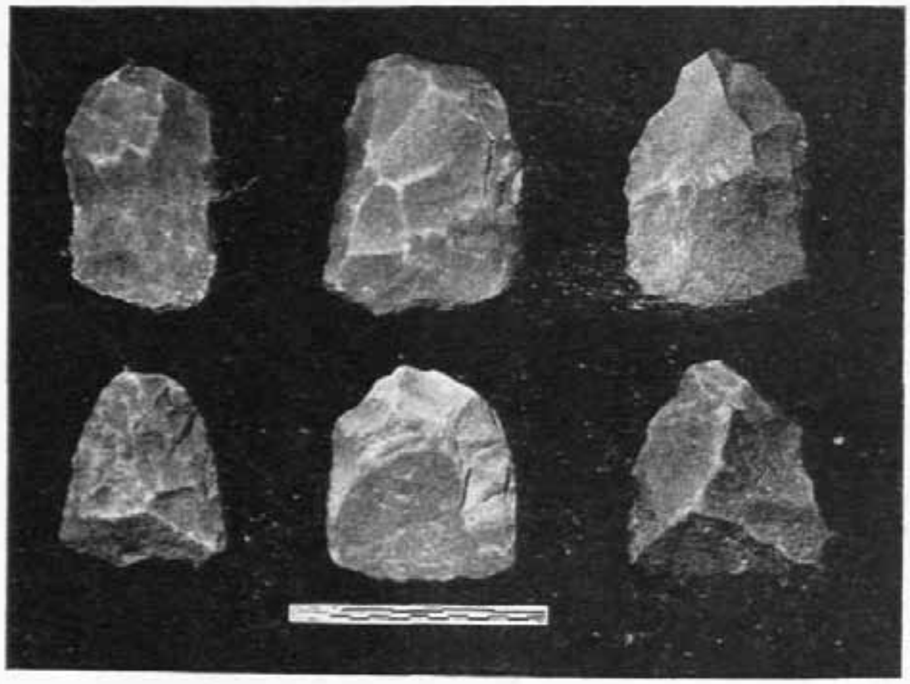




A　　B

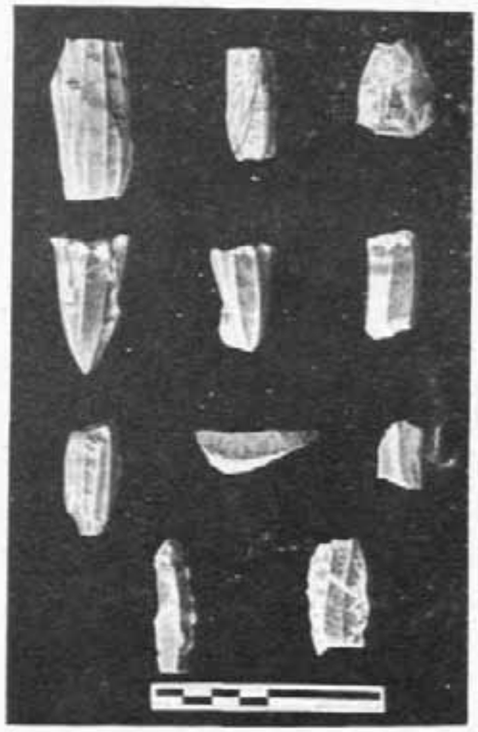
*Palaeoliths from : A, Nandikeswar; B, Chittorgarh and Nagari.* *See page 68*

PLATE LXXV





*Palaeoliths from Chittorgarh and Nagari.* *See page 68*



A. *Microliths and fluted cores from Rajasthan. See page 69*




B. *Shouldered stone celt from Deulbarh. See page 69*

PLATE LXXVII



*Ajanta: interior of a newly-discovered cave.* *See page 72*